The Cotton Gin and Oil Mill

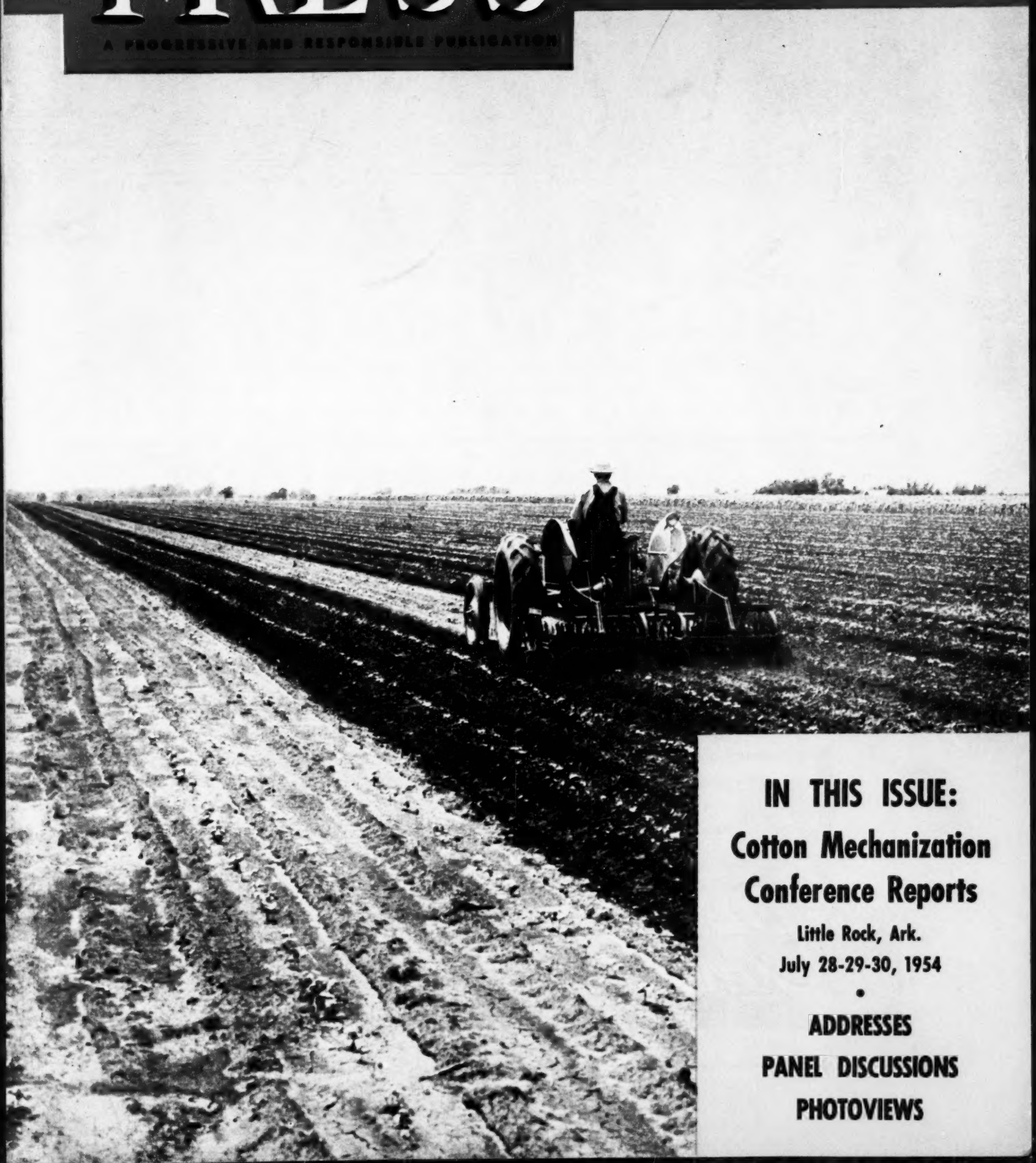
PRESS

55th year

AUGUST 14, 1954

THE MAGAZINE OF THE COTTON GINNING AND OILSEED PROCESSING INDUSTRIES

A PROGRESSIVE AND RESPONSIBLE PUBLICATION



IN THIS ISSUE:

Cotton Mechanization Conference Reports

Little Rock, Ark.
July 28-29-30, 1954

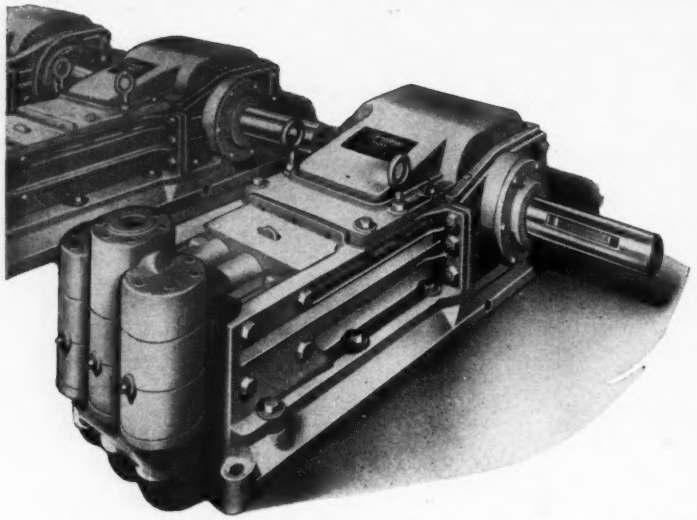
•

ADDRESSES

PANEL DISCUSSIONS

PHOTOVIEWS

LUMMUS *Speedex* HYDRAULIC PUMP



It is new. It has capacity enough for two or three rams. Completely enclosed, self-lubricated. Roller bearing crank-shaft. Insert type connecting rod bearings. Permanent type packing. Engineered for long, trouble-free service. A truly modern pump. Write for Bulletin #642 which has all the details.

LUMMUS COTTON GIN CO.

Lummus is doing more to put gins on a better paying basis.

Dallas, Texas **Columbus, Georgia** **Memphis, Tennessee**

Be Sure to See CONTINENTAL'S Gin Stands in Operation This Ginning Season

PERFORMANCE is the only standard by which efficiency of gin machinery can be judged. This is why we are so keenly interested in having you see for yourself Continental gin stands in operation this ginning season. You will be amazed at their all around smooth performance and particularly impressed with their outstanding cleaning ability by the amount of foreign matter discharged from their overhead and underneath moting systems.

Continental gins are in widespread use throughout the Cotton Belt. Write us —if you do not know the location of the nearest one to you.

Continental GIN COMPANY

Entered as second-class matter February 4, 1905, at the Post Office at Dallas, Texas, Under Act of Congress of March 3, 1897

Everywhere in the South...

Cottonseed Oil Millers are using the

ANDERSON EXPELLER PROCESS

● Count up the red dots and you'll find seventy-seven! Why the sudden widespread adoption of Anderson's cottonseed extraction method? There are many reasons but here are three important considerations. First the new Anderson High Capacity Expeller Process produces a hydraulic quality oil that refines by the slow break method. Second, one machine obtaining this quality oil can process up to 51.2 tons of cottonseed per day with a residual oil content often less than 4%. Third, present cooking equipment in many hydraulic mills is adequate for this new process. Because of the saving in oil and lower operating costs, Anderson's cottonseed process usually pays for itself in a relatively short period of time.

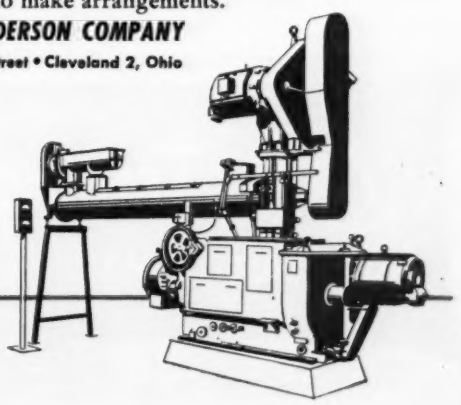
If you haven't as yet investigated Anderson's new Heavy Duty High Capacity process, do so today. Ask us to show you through an oil mill near you. Write, wire or phone and we will be glad to make arrangements.

THE V. D. ANDERSON COMPANY

1941 West 96th Street • Cleveland 2, Ohio

Have you investigated Anderson's Heavy Duty High Capacity

EXPELLER PROCESS?



Finish the job Right!

USE THE

BEST BAGGING

IMPORTED INTO THE
U. S. A. TODAY!

Use

"Pride of India"

MANUFACTURED IN INDIA

JUTE BAGGING

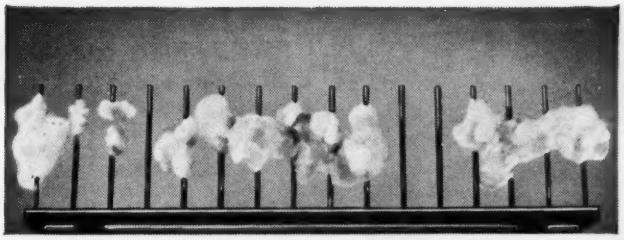
GUARANTEED NEW 2 LB. 21 LB. TARE
ASSURING BAGGING STRENGTH
AND DURABILITY

C. G. Trading Corporation

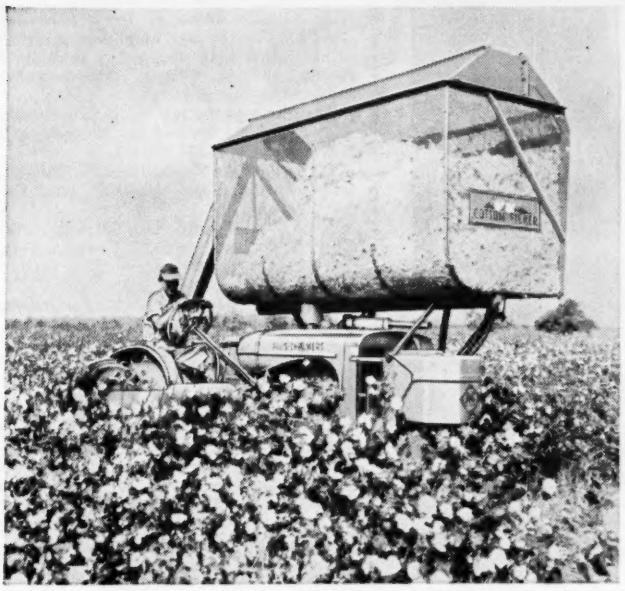
122 EAST 42nd ST. • NEW YORK, N. Y.

Sales representatives throughout cotton producing districts.

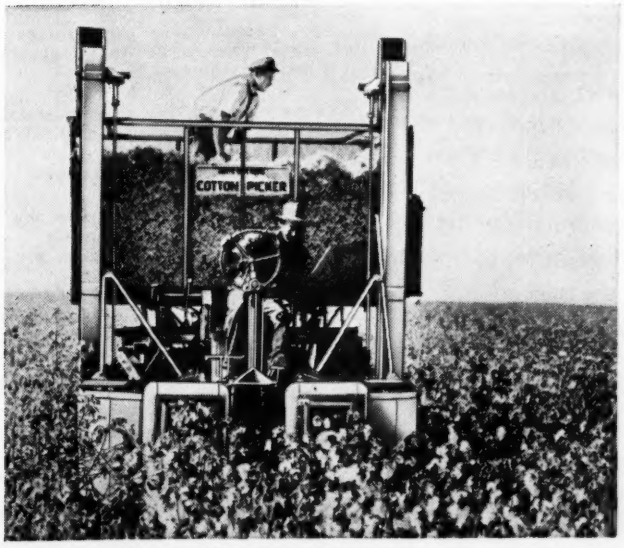
Stocks Maintained in
Houston and Corpus Christi, Texas; Charleston, South Carolina



Allis-Chalmers spindle design and action give you cleaner cotton . . . with grades comparable to average hand picking. There's less trash . . . less staining of lint. The spindles are long, grooved, and barbless . . . moistened so the lint will catch quickly. The spindles stop rotating while the cotton is smoothly removed, without knotting, twisting or tearing the fibers. Cotton like this gins better and brings a higher price!



The new Allis-Chalmers One-Row Picker is designed for easy mounting and quick demounting, powered by standard WD, WD-45 and CA Tractors.



The Two-Row Allis-Chalmers Cotton Picker sets a new standard of big-capacity performance at lower first cost and with less upkeep. Like the One-Row model, it harvests the mature cotton, leaving unopened bolls for later picking.

now you can harvest mechanically . . . *at a profit*

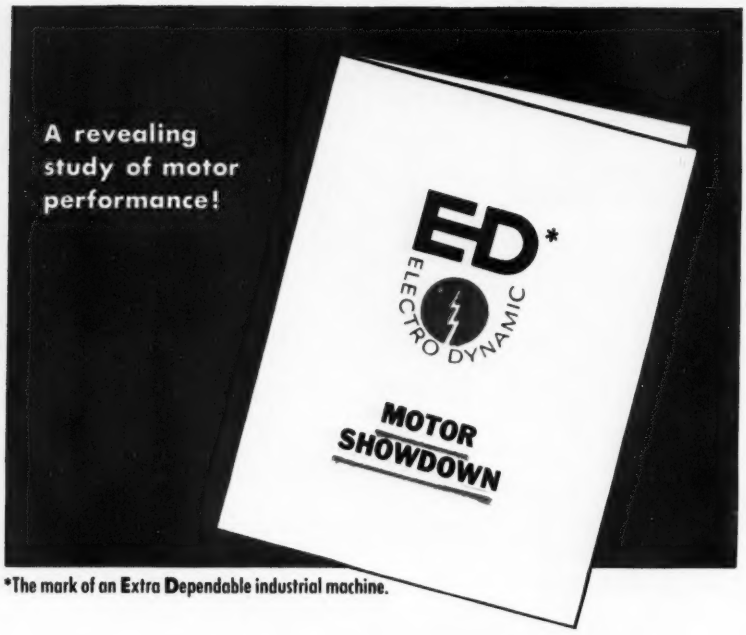
The final miracle of cotton is mechanical harvesting — recognized by agricultural college engineers and leading cotton growers as the next step in lowering costs.

Now Allis-Chalmers makes mechanical harvesting practical for almost every cotton grower. A new, efficient One-Row Picker — *priced for home ownership* — is available for growers of all size acreages. It is easily mounted on your own standard CA, WD, or WD-45 Tractor. Also easily demounted, it quickly frees your tractor for other farm work.

The new One-Row Picker has the same proved principles of design pioneered by the popular Allis-Chalmers big-capacity, Two-Row Picker. Both are priced to permit volume harvesting at consistently lower cost than hand picking.

This year, harvest your crop quickly with less man power, ahead of weather damage. Get quality grades at lower costs. An Allis-Chalmers Picker can help you *keep* cotton-growing profitable.

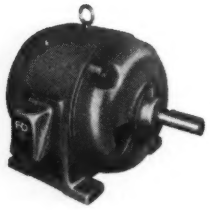
1-Row and 2-Row **ALLIS-CHALMERS** TRACTOR DIVISION • MILWAUKEE 1, U. S. A. *Cotton Pickers*



*The mark of an Extra Dependable industrial machine.

THIS CANDID REPORT UPSETS MANY IDEAS ON MOTOR SELECTION FOR GIN MACHINERY

The results of comparative performance tests* on production line models of different makes of electric motors are reported concisely in a new booklet entitled **"MOTOR SHOWDOWN"**. The facts revealed are of real importance to anyone concerned with motor selection, because the makes of motors tested power over 75% of the electrically operated machinery in *your* industry. Mail the coupon below for your copy.



*Tests certified by J. Arthur Balmford, Professor of Electrical Engineering at a leading Eastern university

1 to 250 hp. AC and DC. Standard or special purpose. N.E.M.A. standards.

ELECTRO *Extra* **DYNAMIC** *Dependable motors*

ELECTRO DYNAMIC • ***Division of General Dynamics Corporation***
147 Avenue A, Bayonne, New Jersey

Please send me a copy of "MOTOR SHOWDOWN" and the new catalog of Electro Dynamic industrial motors.

ED MOTOR SHOWDOWN

NAME_____

COMPANY_____

ADDRESS_____

laugh it off

Sailor—"Hiya, Babe?"

Girl—"Sir, just because you are in uniform, don't think you can make friends on a public street with a strange girl who lives at 1746 Mishmosh Avenue, telephone Main 1802."

• • •

A hillbilly came to town carrying a jug of liquor in one hand and a shotgun in the other. He stopped a man on the street, saying, "Here, friend, take a drink outa my jug."

The man protested he didn't drink.

The hillbilly leveled his shotgun at the stranger and said, "Drink."

The stranger drank, then he shuddered, shook, shivered and coughed, "Gad, that's awful stuff."

"Ain't it?" said the hillbilly. "Now hold the gun on me until I take a gulp."

• • •

"What's the matter, Mary?"

"I've got rheumatism in my muscles."

"You ought to visit a masseur."

"What's that?"

"A man who pinches you all over."

"Oh, you mean a marine."

• • •

There was a young husband who put a sign on his old, but flashy-looking convertible: "For Sale. Good courting car. As part payment, owner will take household furniture and baby buggy."

• • •

Mrs. Deleigh (meeting politician at party): I've heard a great deal about you.

Politician (absently): Possibly, but you can't prove it.

• • •

Wave: I wonder what service men talk about when they're alone together in the barracks.

Wac: Probably the same things we talk about when we're alone together.

Wave: Oh, the mad, bad men!

• • •

Young man, visiting summer training camp, (to good looking maid): Who's Major around here?

Maid (demurely): No one—yet.

• • •

There once was a co-ed quite shy,
Who dated a fellow named Si;
She told him, "If you kiss me, of course,
You're going to have to use force;
But I'm afraid that you're stronger than I."

• • •

Does your wife believe everything that you tell her?

Does she? She even believes a lot of things I don't tell her.

• • •

"What makes John such a good artist?"

"His mother lives at the studio with him."

• • •

A small boy was asked to write what he had been taught about the human body. This was the result: "Our body is divided into three parts, the brainium, the borax and the abdominal cavity.

"The brainium contains the brain, if any.

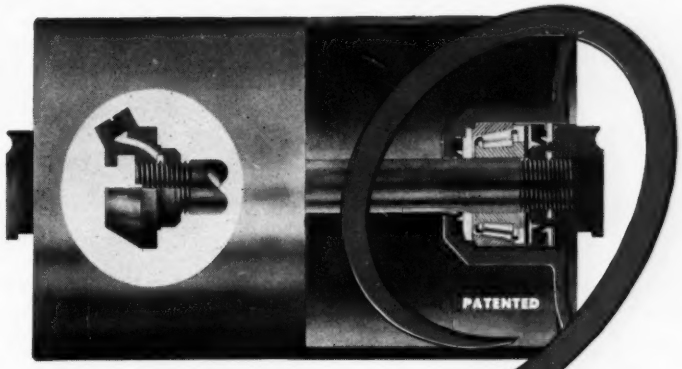
"The borax contains the lungs, lights and heart.

"The abdominal cavity contains the bowels, of which there are five: a, e, i, o and u.

UST* Continental Idlers

*** UNIT-SEALED PRE-LUBRICATED TIMKEN BEARINGS**

Saves Grease!
Saves Labor!
Saves Belts!



STANDARD DUTY IDLER

CGC UNIT-SEALED
CGC PRE-LUBRICATED
CGC TIMKEN BEARINGS

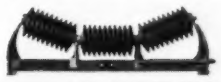
Continental's Unit-Sealed "UST" Conveyor Idlers, incorporating Timken Bearings, Garlock Klozures, are the answer to the operator's prayer.

The Unit Bearing Assemblies—"sealed unto themselves" provide an ample but not excessive grease reservoir. This represents a saving of grease and further eliminates any possible migration of the grease from upper to lower bearings on inclined rolls. The lubricant is a top quality water repellent grease of a stable consistency with a wide temperature range for long life.

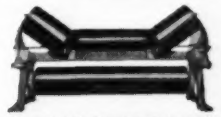
Most important—this construction permits operating the Continental "UST" Idler without relubrication for 1-2-3 years depending upon the severity or character of conditions.

For detailed information on these idlers write for Bulletin CGO-116

SELF-ALIGNING FLAT BELT IDLER



RUBBER DISC IMPACT IDLER



GRAIN CONCENTRATION IDLER

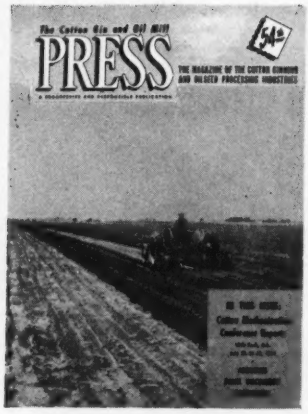
SELF-ALIGNING TROUGHING IDLER

***Long Life*— THE ULTIMATE IN MINIMUM MAINTENANCE**

CG—5209

INDUSTRIAL DIVISION
CONTINENTAL GIN COMPANY
BIRMINGHAM, ALABAMA

ENGINEERS CGC ATLANTA • DALLAS • MEMPHIS • NEW YORK CGC MANUFACTURERS



★ ON OUR COVER:

Mechanical weed control is an important phase of cotton mechanization, and makes an appropriate subject for the cover of this issue, reporting the 1954 Cotton Mechanization Conference. The rotary weeder shown is on the Fred Shaw farm in Ellis County, Texas. Its use conditions the land for cultivation, destroys weeds and grass and breaks the crust, allowing air and sunlight to enter and warm the soil.

Photograph by C. B. Spencer
Texas Cottonseed Crushers' Assn.

VOL. 55 AUGUST 14, 1954 NO. 17

The Cotton Gin and Oil Mill PRESS...

READ BY COTTON GINNERS, COTTONSEED CRUSHERS AND OTHER OILSEED PROCESSORS FROM CALIFORNIA TO THE CAROLINAS

★ ★ ★

OFFICIAL MAGAZINE OF:

National Cottonseed Products Association

National Cotton Ginners' Association

Alabama Cotton Ginners' Association

Arizona Ginners' Association

Arkansas-Missouri Ginners' Association

California Cotton Ginners' Association

The Carolinas Ginners' Association

Georgia Cotton Ginners' Association

Louisiana-Mississippi Cotton Ginners' Association

New Mexico Cotton Ginners' Association

Oklahoma Cotton Ginners' Association

Tennessee Cotton Ginners' Association

Texas Cotton Ginners' Association

★

THE COTTON GIN AND OIL MILL PRESS *is the Official Magazine of the foregoing associations for official communications and news releases, but the associations are in no way responsible for the editorial expressions or policies contained herein.*

PUBLISHED EVERY OTHER SATURDAY IN OUR OWN PRINTING PLANT AT 3116 COMMERCE STREET, DALLAS 26, TEXAS

✶

OFFICERS AND EDITORIAL STAFF

RICHARD HAUGHTON
Chairman of the Board

DICK HAUGHTON, JR.
President and Advertising Manager

GEORGE H. TRAYLOR
Executive Vice-President and Secretary-Treasurer

IVAN J. CAMPBELL
Vice-President and Editor

B. P. RIDGWAY
Vice-President and General Superintendent

WALTER B. MOORE
Assistant Editor

BETTE HOLBROOK REED
Editorial Assistant

WASHINGTON REPRESENTATIVE (EDITORIAL ONLY)

FRED BAILEY
744 Jackson Place, N.W.
Washington 6, D. C.

✶

SUBSCRIPTION RATES:

Domestic: 1 year $3; 2 years $5; 3 years $7. Foreign: Latin-American countries $10; all others $15 per year. (Not accepted for "Iron Curtain" countries.) All subscriptions cash with order.

★ ★ ★

EXECUTIVE AND EDITORIAL OFFICES:

3116 COMMERCE STREET, DALLAS 26, TEXAS

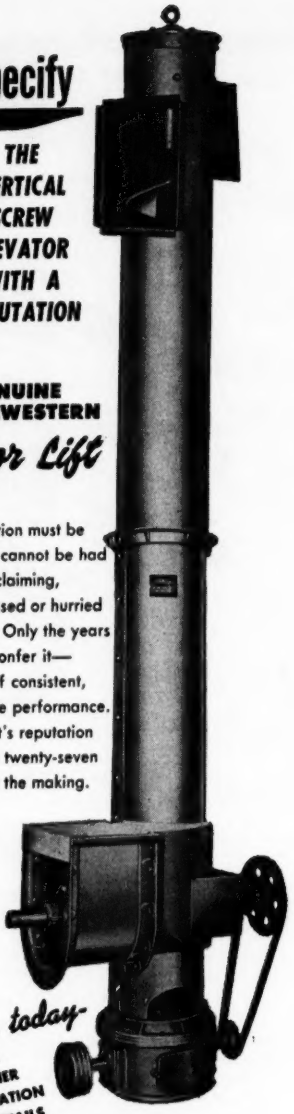
A PROGRESSIVE AND RESPONSIBLE PUBLICATION

Specify

THE VERTICAL SCREW ELEVATOR WITH A REPUTATION

GENUINE SOUTHWESTERN Rotor Lift

Reputation must be earned. It cannot be had by claiming, be purchased or hurried into being. Only the years can confer it— years of consistent, dependable performance. Rotor Lift's reputation has been twenty-seven years in the making.



Write today FOR FURTHER INFORMATION AND DETAILS

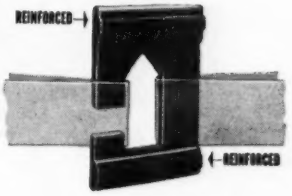
Southwestern Supply and Machine Works

Rotor Lift
BEST AND FOREMOST SINCE 1925

P. O. BOX 1217
OKLAHOMA CITY, OKLAHOMA

INSIST ON DIXISTEEL COTTON TIES

. . . with the new, reinforced buckles



DIXISTEEL COTTON TIES

Standard bundles weigh approximately 45 pounds and contain 30 ties—each 15/16 inches by approximately 19 gauge, 11½ feet long. Thirty buckles attached to each bundle. Sixty-pound ties also are made. Both weights available without buckles. Buckles shipped in kegs or carload bulk lots.

DIXISTEEL COTTON TIES — favorite with ginners for more than 50 years — now come to you with new, reinforced DIXISTEEL Buckles.

Made from our own, special-analysis steel and rolled to uniform thickness, width and finish, DIXISTEEL Cotton Ties are made to stand the gaff. No sharp edges. Easy to work.

New, reinforced DIXISTEEL Buckles have an extra-heavy, extra-wide bead top and bottom. They won't snap at the eye, even when dry, springy cotton is baled in modern, high-pressure presses. They seat firmly, are easy to thread, won't slide or cut the tie.

Specify DIXISTEEL Cotton Ties and Buckles. Order now.

made only by the

DIXISTEEL TRADE MARK **COTTON TIES AND BUCKLES**

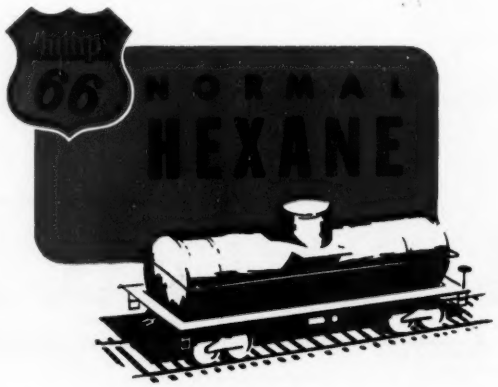
Atlantic Steel Company

ATLANTA, GEORGIA

Phillips Hexane is extra clean

Purest solvent you've ever seen!

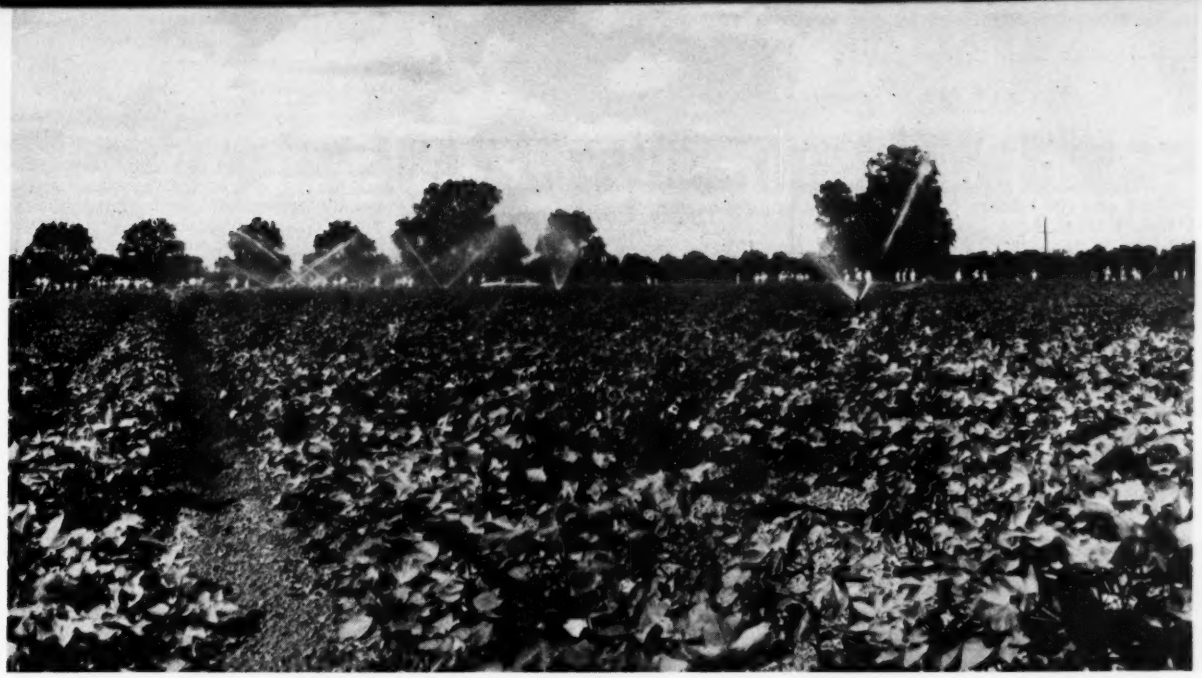
● It has to be seen to be appreciated . . . the way the purity and cleanliness of Phillips *66* Solvents is protected during every step of the manufacturing, storing and shipping. Phillips *66* Hexane contains no contaminants to harm your finished product. Write for full information about these top-quality solvents. No light ends . . . no heavy residue.



PHILLIPS PETROLEUM COMPANY

Special Products Division

Bartlesville, Oklahoma



CG&OMPress Photo

SPRINKLER IRRIGATION on the Harold A. Young farm, scene of the mechanized demonstration on July 30.

Proceedings of the

Eighth Annual Beltwide Cotton Mechanization Conference

FOLLOWING are the addresses and panel discussions of the eighth Beltwide Cotton Mechanization Conference at Little Rock, July 28-29-30, 1954:

THE CONFERENCE, held July 28-29-30 at Little Rock, was sponsored by the National Cotton Council of America in cooperation with Land-Grant Colleges, Farm Equipment Institute, U. S. Department of Agriculture, Arkansas Local Arrangements Committee, Vocational Agriculture and Farm Organizations.

New Era in Mechanization

■ *By Harold A. Young, North Little Rock, Ark., Chairman of the Board, National Cotton Council*

I CLAIM no special wisdom to tell one era from another as we make progress in mechanizing Cotton Belt agriculture. Yet I believe you will agree with me that we have surely entered a new period in which the nature of our progress will be different from what it was in the first five or six years after World War II.

Never before in the history of our country was there such mechanization progress in cotton production as we have seen during the past decade. In fact, as our good friend, H. P. Smith of Texas A. & M. College, so accurately said a few weeks ago, "There have been more developments in equipment and mechanization practices for cotton within the past 10 years than in all the centuries that cotton has been grown.

Although no technological developments came easy, the great movement of machines from the **factory** to the **farm**, which we had in the year after World War II, was **relatively** easy. That movement was aided by what we often refer to as a "seller's market." Some of the major contributing factors were the farm equipment "vacuum" at the end of World War II, the higher-than-average income of farmers during most years of the past decade, and the labor shortage created by almost a million workers leaving the farm to take jobs in town.

However, the new era in which we now find ourselves is substantially different. The "vacuum" has lessened considerably as a result of increased mechanization, and the net income of farmers has lowered noticeably. Historically, there is a fairly close relationship between the net income of farmers and their expenditures for farm machinery and equipment. Last year's shipments of new tractors and farm equipment were perhaps the lowest of any year since raw materials became generally available following World War II—and according to farm equipment publications, this year's production is somewhat lower. Although some inventory reductions have been under way the past several months in both new and used equipment, available information indicates that retail sales—after adjustment for price—were also slightly lower than any year since 1947. I do not know if the farm equipment industry will agree with me on this, but I wonder if present sales of **some** items haven't just about reached the level where they approximate only the quantity needed for replacement purposes. In other words, mechanization, if you want to measure it simply by the number of items of equipment being placed on farms, has slowed down perceptibly.

Based on my personal observation and knowledge of the Cotton Belt, I think this general picture of a slackening off in machinery acquisition is fairly representative of the situation in our own area—though mechanical harvesters and a few other labor saving items are perhaps exceptions.

In my opinion, we are not likely to have another seller's market rivaling the last one. People will be more cau-

PHOTOVIEWS of the mechanized demonstration on the Harold A. Young farm will be found on Pages 18-19.

tious as they step up their buying of machines and equipment. They will want to get their pencils sharper on the costs involved and the returns to be expected. It will, I trust, be a healthy, constructive kind of caution. But the forces that are pushing us all toward further mechanization cannot be stopped. However, the farmers, the manufacturers and everyone between will be expected to meet tougher requirements. It will be an era of new challenges.

Meeting the challenges—What can we do? I'm going to suggest two major lines of attack. The first of these is an intensified educational program aimed at using machines and associated production practices more effectively to lower our production costs. I would hope that this would include a merging, or at least a very close integration, of equipment sales programs with educational activities of our public service programs in agriculture. Instead of "generalized" recommendations, instead of broad-gauge sales techniques by equipment suppliers —I am suggesting that our emphasis should be shifted to a "sharp-shooter" plan of attack—one that really gets into the complicated problems of fitting machines more precisely into the development of sound, long-range production plans for individual growers.

The thing we're all striving for is more efficient production, with just that emphasis on quality and on cost reduction which will do most for the net incomes of farmers. When income slides, it is only natural to hunt for new and better ways of cutting costs, and one of those ways is mechanization. There are various publications of land grant colleges which show the economy of mechanizing under most conditions prevailing in the Cotton Belt. Also, only recently a prominent cotton grower released figures showing that the cost of producing a pound of lint cotton in 1953 was 7.6 cents more when hand labor was used for weed control and harvesting, than when complete mechanization practices were employed.

With this kind of information before us, I'm sure we all agree that many farmers cannot afford to slow down on mechanization under present cost-price conditions. But is information on the economics of mechanization getting into the hands of farmers — translated in such a manner that each one fully understands what mechanization means to him in terms of dollars and cents? Or does some of the information lack interpretation and wind up on a dead-end street? I suggest that it does. I believe that wholehearted teamwork between local dealers, the extension service, vocational agriculture and other groups could give individual farmers a better insight into what mechanization has to offer them under the present farm income situation.

And now, my suggestion number two for the new era: We all know that mechanization has not made equal progress in every phase of the cotton growing process. I suggest that we concentrate more effort where the biggest gaps in that progress seem to appear. That is what we need in order to consolidate our gains of the past decade and to make those gains pay off as they should. Just to mention a few: there's the problem of better crop residue disposal and land preparation for precision planting and pre-emergence weed control; there's the problem of **complete** weed control by mechanical or chemical means; there's the problem of cultivating cotton which is to be harvested mechanically in such a manner as to aid and not hinder harvesting operations.

There's the problem of properly training operators to use and not abuse available production and harvesting machinery. There is a great deal of difference between **plowing a mule** and **operating a tractor with five-row multiple purpose equipment,** or between **hand-picking cotton** and **operating a mechanical harvester.**

• **Preserving Quality**—On the surface, these problems sometimes don't appear to be too bad. But let's take a closer look at one of the big obstacles which looms before us today. It is the **preserva-**

(Continued on Page 20)

Texas To Be Host for 1955 Conference

Texas will be host state for the 1955 Beltwide Cotton Mechanization Conference. Dates for the meeting will be set for some time in September. Headquarters will be the Texas A. & M. College campus at College Station, with the demonstration phase of the program to take place at the Blackland Experiment Station at Temple.

These decisions were announced after a meeting of the Mechanization Steering Committee during the 1954 Conference in Little Rock.

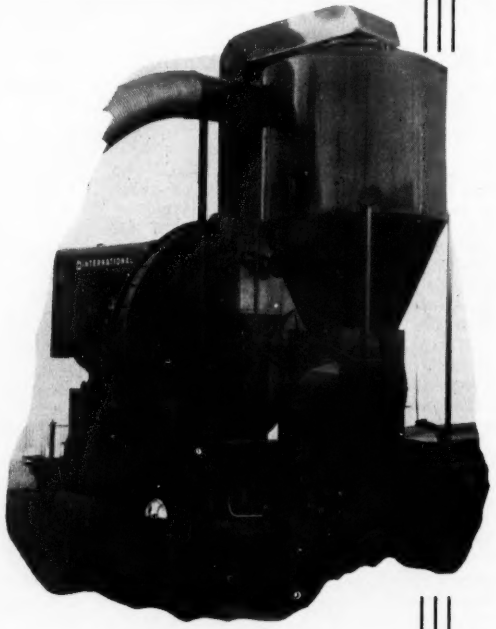
PORTABLE PNEUMATIC CONVEYOR

IDEAL FOR LOADING TRUCKS AT GIN WAREHOUSES!

★ **VERSATILITY**
Meets all requirements of your unloading operation . . . speeds up the handling of grains, cotton seed, peanuts, soybeans and other materials.

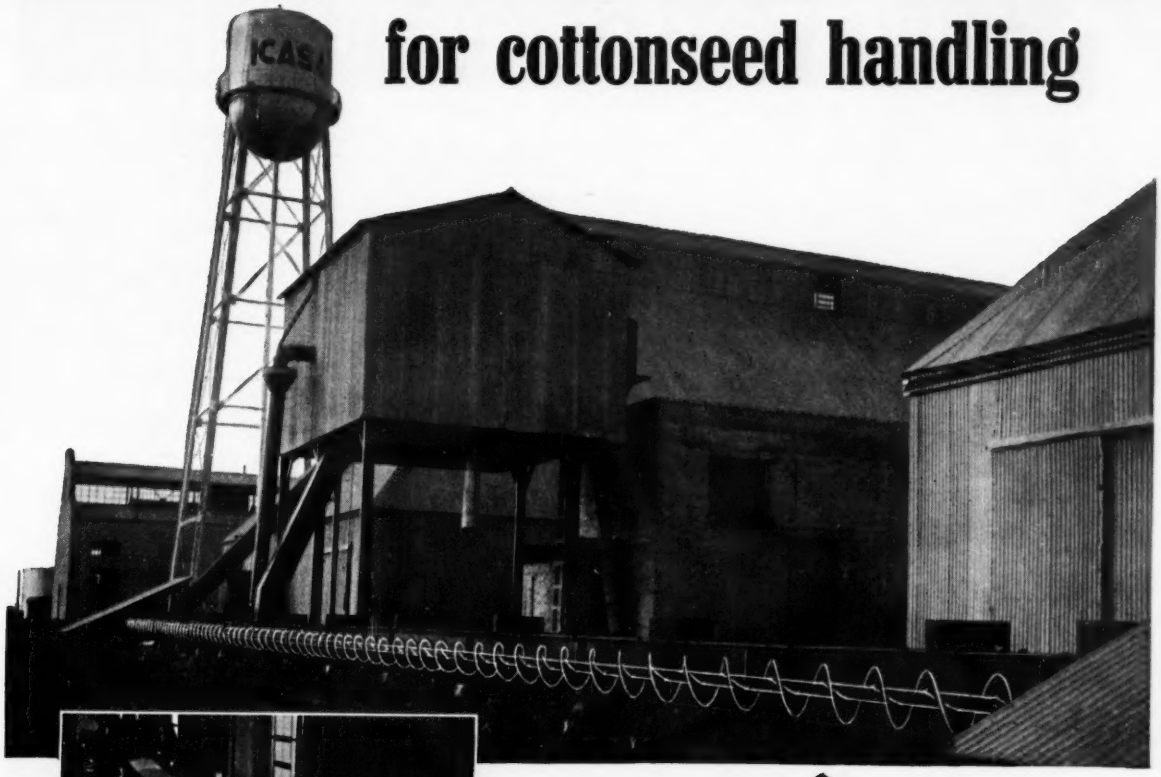
★ **ADAPTABILITY**
For any type job . . . unloading trucks or boxcars into conveyors, or unloading and blowing direct to storage. We can handle your air-conveying requirements.

Excellent for Cooling Materials While in Storage



Hubert Phelps
MACHINERY COMPANY
1700 EAST NINTH ST. – PHONE FRANKLIN 2-1314 – LITTLE ROCK, ARK.

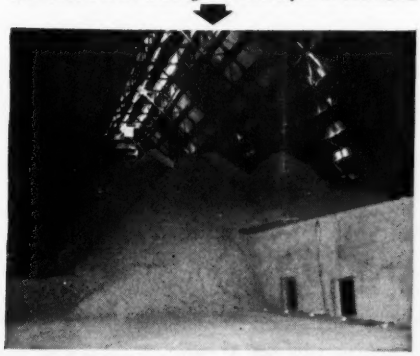
Here's why ICASA relies on LINK-BELT for cottonseed handling



Cottonseed is carried from unloading station by 166-ft. Link-Belt screw conveyor to either of two seedhouses. At each, an 83-ft. enclosed drag conveyor raises it to the seedhouse lantern, where the 171-ft. belt conveyor distributes it.

Plow is moved to discharge cottonseed from belt conveyor anywhere along seedhouse length.

Screw conveyor in tunnel reclaims or recirculates cottonseed. Distributing belt conveyor is overhead.



Link-Belt provides high efficiency at present plant capacity... flexibility for economical future expansion

AT THE ICASA oil mill of Industrial Castillo, S.A., of H. Matamoros, Mexico, they process 100 metric tons of cottonseed daily. Over 1000 feet of Link-Belt screw conveyors provide low-cost handling from unloading station to the mill building. And in the processing of the seed, other Link-Belt screw conveyors, bucket elevators and Rotor Lifts are used.

So efficient is the system that the present capacity can be doubled with a minimum of expense. In addition, the same screw conveyor that reclaims to the mill can be reversed to recirculate the seed via Link-Belt drag and overhead belt conveyors to another part of the seed house.

Link-Belt builds a complete line of conveying and power transmission machinery. Whatever your materials handling needs, your Link-Belt representative can help you select the right combination of equipment for your job.

LINK-BELT

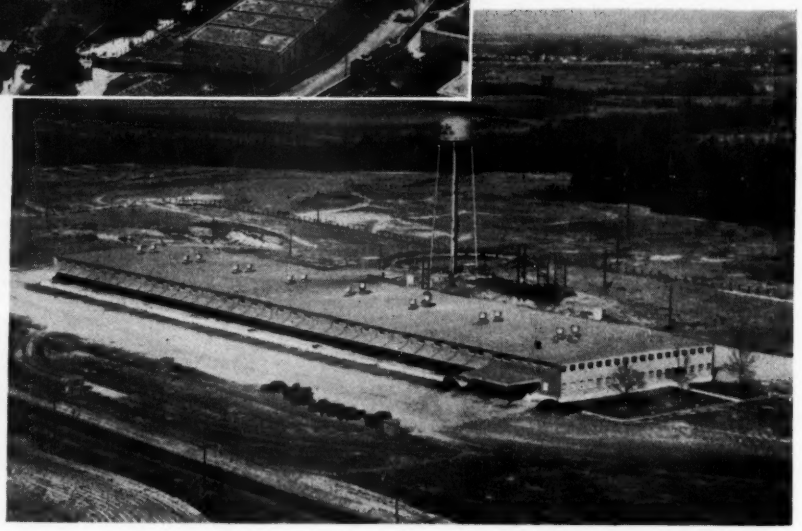
CONVEYORS and ELEVATORS

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13.951

NOW BELTON makes it

DOUBLE SAFE... DOUBLE SURE!

By
Manufacturing
Both
AT
HOME
AND
ABROAD



Above: Home of Belton's "Superior Brand" Bagging in Calcutta, India. Right: Home of Belton's "Superior Brand" Bagging in Belton, South Carolina.

In times of international conflicts . . . in times of bigger-than-usual crops . . . Belton is able to give you a *doubly safe, doubly sure* source of supply of Superior Bagging.

BELTON SUPERIOR BAGGING
2 lb. WEIGHT — 21 lbs. TARE

SALES OFFICES:
Belton, S. Carolina
Fresno, California
Memphis, Tennessee
Dallas, Texas

BELTON BAGGING CO.
BELTON, SOUTH CAROLINA

CG&OMPress Photo.

MECHANICAL PICKERS on display at the mechanized demonstration which was held on the Harold A. Young farm in connection with the Eighth Annual Beltwide Cotton Mechanization Conference at Little Rock.

More Emphasis on Education as

Mechanization Enters New Era

THERE IS STILL much to be done to fill the remaining big gaps in mechanization, but the Little Rock conference underlined the growing need for an intensified educational effort designed to put our present knowledge and machines to work on the individual cotton farm.

By IVAN J. CAMPBELL

Editor, The Cotton Gin and Oil Mill Press

THE EIGHTH ANNUAL Beltwide Cotton Mechanization Conference held July 28-29-30 at Little Rock provided industry leaders with an opportunity to hear specialists in practically every phase of mechanization review progress to date and discuss objectives still not fully attained.

The loss of close to a million Cotton Belt farm workers since 1940 resulted in the rapid development of new and improved farm equipment and chemicals following World War II. The farm equipment shortage that existed at the end of the war spurred the manufacturers to develop new machines and improve old ones, and higher-than-average farm income enabled growers to replace mules with tractors and to buy other labor saving equipment. It was indeed a period of rapid and dramatic progress, a period in which the manufacturers successfully met the demand of farmers for badly needed equipment to produce cotton and other crops.

But now the mechanization trend has taken an altered course and we are entering a new era which National Cotton Council Board Chairman Harold A. Young told the Conference will demand (1) a sharp-shooting educational program that helps individual cotton growers solve the complicated problems of fitting machines into sound, long-range production plans, and (2) more effort to close the remaining big gaps in mechanization.

The Council official reminded Conference delegates that the farm equipment vacuum existing at the close of the war has lessened considerably as a result of increased mechanization and that the net income of farmers has lowered noticeably. "In other words," he said, "increased mechanization, if measured simply by the number of items of equipment actually in use on farms, has slowed down perceptibly."

Stating it as his belief, under present cost-price conditions and with machines opening up new economic opportunities, farmers cannot afford to slow down on mechanization, Young called for wholehearted teamwork between local dealers, the extension services, vocational agriculture and other groups to give individual farmers a better insight into what mechanization has to offer them under the present farm income situation.

The papers at the Little Rock conference ably covered such subjects as crop residue disposal, deep tillage, seedbed preparation, planting, chemical and mechanical weed control methods, application of insecticides and defoliants, preservation of cotton quality, supplemental irrigation in the rain belt, and the need for credit in adjusting cotton farms to efficient mechanized units. All Conference papers, including the panel discussions, are published elsewhere in this issue of The Cotton Gin and Oil Mill Press.

One speaker said it is highly improbable that there will ever be one universally best system of cotton mechanization because the details of the most effective mechanization for a particular field are greatly affected by variety, soil type, topography and climate—in fact, he said, even the quality of labor and management available. For these and other reasons, he pointed out, research on a project such as cotton mechanization is a long-time process—perhaps a never-ending process—because the change in any one phase of any one operation of cotton production may call for a re-examination of all the other operations.

There has been much thinking recently about "comparable efficiencies and comparable incomes" in cotton produc-

tion. This means, simply—to quote from the Conference paper by Dr. C. R. Sayre—that "the cotton farmer with $50,000 in land and equipment should logically get a return about in line with what the same investment would yield in Midwest corn and hogs—or in a factory turning out industrial goods. Eventually," Doctor Sayre told the Conference, "he must be able to pay his labor about as much as workers of equal skill are paid elsewhere in the economy. Then and only then will cotton be on a solid foundation of comparable efficiencies and comparable incomes."

Right now, as a reading of Doctor Sayre's paper will reveal, the physical productivity of the average family growing cotton is about 20 bales. In the Midsouth many families are well above this level, some actually going as high as 50 bales per season. The 20-bale average compares with a physical productivity of only about 10 bales in the 1930's.

This indicates real progress, brought about principally by the substitution of tractor power for mule power and the use of mechanical harvesters. But at the same time, Doctor Sayre pointed out, "many farmers face a situation in which they can eliminate hand labor in harvesting, only to realize that they must keep a large complement of tenants to take care of chopping."

Thus it can be seen that the hoe is still a major obstacle in the cotton farmer's effort to match the "comparable efficiency and comparable income" status of, say, the wheat farmer and the Midwest corn farmer.

But we have found ways to reduce the hoe bill through the development of machines that plant to a stand and, as Dr. Harold T. Barr of Louisiana State University pointed out, we are making progress in improving weed control chemicals, application equipment and techniques. He predicted that the use of herbicides may slash weed control costs in half for many cotton farmers.

Alabama and Georgia Crushers Set Dates

The joint convention of the Alabama-Florida Cottonseed Products Association and Georgia Cottonseed Crushers' Association will be held June 20-21, 1955 at the Edgewater Gulf Hotel, Edgewater Park, Miss. T. R. Cain, Montgomery, executive secretary of the Alabama-Florida group, 1955 host, announced the dates. J. E. Moses, Atlanta, is secretary of the Georgia group.

Occupying a prominent place on the Conference program was a panel discussion of irrigation in cotton production in the rain belt. The panel leader and eight participants explored the subject from every angle and discussed such aspects as weather, physical essentials, the need for research, water rights, effects of irrigation on yield and fiber quality, cost and management problems, and the compatibility of irrigation with other cotton production practices.

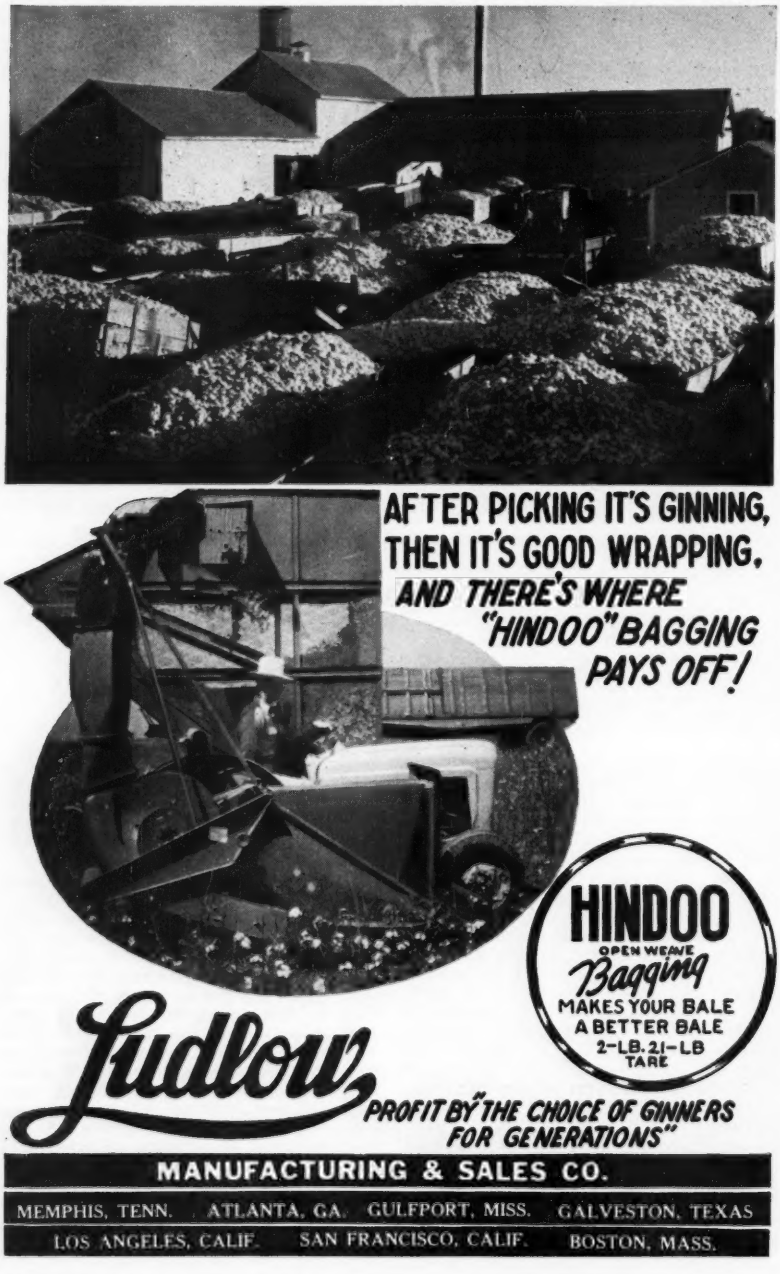
One panel member cited research results in Missouri last year in which the yield of irrigated cotton amounted to 2,000 pounds more seed cotton per acre than non-irrigated cotton. Others told of experiments elsewhere in the Midsouth, all of them indicating that the practice is profitable.

Another panel member told the Conference, "I am of the opinion that gravity irrigation has a much more universal application in the East and South than is generally supposed." With proper design and proper land preparation, he stated, gravity irrigation may be as economical of water as sprinkler irrigation and even more so under many conditions. And, he pointed out, the amount of labor required may be only a fraction of that required for sprinkler irrigation.

He urged farmers to consider the entire farm unit in planning an irrigation program since irrigation often introduces new crops, practices and work schedules. The same speaker expressed it as his opinion that sprinkler equipment probably will be used on most irrigation projects in the Eastern and Southern States, and said that many distributors and dealers have engineers who are competent to design this type installation and teach farmers to operate it.

Cotton growers were urged to investigate water supply sources thoroughly before buying equipment or leveling land. Where drilling of wells is planned, it was strongly recommended that the characteristics of the well be determined in advance.

In other words, it was explained, it must be known what the yield of the well is at various stages of drawdown. Then the pump must be fitted to the characteristics of the well and the power plant fitted to the pump. Delegates were warned that "there are thousands of cases of tragic misfits in all pumping areas and these cost the irrigator untold thousands of dollars. Careful engi-



neering in the beginning is a prerequisite to successful irrigation pumping."

Irrigation in the rain belt is a relatively new practice in cotton production and for that reason many questions are being asked which cannot be answered. For example, present data, while promising and in favor of the practice, provide no precise answer to the question of costs or benefits from supplemental irrigation.

Similarly, it was brought out that we know very little about the optimum moisture requirements for cotton, how irrigation will effect other cotton practices, how to determine when it is time to apply irrigation water, or how much water is needed.

But in spite of our limited knowledge there is no doubt that irrigation in the rain belt is not only here to stay, but that the practice will probably spread rapidly.

James L. Gattis, Arkansas Extension agricultural engineer and a member of the irrigation panel, had this to say about it: "Supplemental irrigation can play an important role in the economical production of cotton in Arkansas since yield increases of 25 to 30 percent can be expected. In my opinion, irrigation is compatible with other good production practices and all are essential."

• Moss-Gordin School Is Well Attended

GIN owners and operators from all sections of the Cotton Belt attended the recent school at Lubbock sponsored by the Moss-Gordin Lint Cleaner Co. Some 165 representatives of gins were present, including some from as far away as Portageville, Mo.

A well-rounded program was enjoyed by those in attendance. It included a tour of the Moss-Gordin factory that was completed this year, to show the ginners how the lint cleaners are made from raw material to the finished product.

A tour was made of the textile department of Texas Tech to see the various stages of cleaning that cotton receives in the mills and through all stages of spinning to the finished cloth.

An address was made at the luncheon held at the Lubbock Hotel for the group by Jack Towery, textile engineer at the college, on the need for better ginning and better cleaning and what this means to the mills. Members of the Moss-Gordin firm talked to the group on the new ideas and plans in the manufacture of lint cleaners.

Following the luncheon, the group was taken step by step through the assembly department of the finished lint cleaners to show each ginner the importance of the various adjustments on the machines and how to care for the lint cleaners for best results in the field.

F. W. Hurston, Oil Mill Leader, Has Retired

F. W. Hurston, Cullman, Ala., a leader in the cottonseed crushing industry for many years, has retired. He was Alabama district manager for the Southern Cotton Oil Co. at the time of his retirement, and had been with the firm for 47 years. He is a former president of the Alabama-Florida Cottonseed Products Association and served the industry in many other assignments.

J. S. Long, formerly at Columbia, S.C., has succeeded Hurston at Cullman.

Here's How You Can Control

PICKING

AND CUT COSTS

The *New* JOHN DEERE No. 1

ONE-ROW MOUNTED

COTTON PICKER

You're in complete, direct command of picking with the new John Deere No. 1 One-Row Mounted Cotton Picker. You're ready for action in a hurry . . . you do an efficient job of picking in every condition . . . you can maneuver easily in the field . . . and you move at high speed from field to field. For these reasons, you can take advantage of *all* good weather . . . you save more cotton . . . you speed work . . . *you cut picking costs.*

One man and the John Deere No. 1 pick up to an acre every hour. If you've been using hand labor to pick your crops, you'll cash in because the No. 1 replaces up to 40 or more hand pickers. What's more, you'll be rid of the headaches of hiring, supervising, and paying an army of help.

Now, if you've been using a machine of another make, you'll find the better work, convenient, time-saving operation, and rugged dependability of the new John Deere No. 1 call for a change. For example, the *new* No. 1 is easy-on, easy-off with no costly, time-consuming tractor conversions. You can make full use of the tractor before and after picking.

See your John Deere dealer. Mail coupon below for free descriptive literature.

JOHN DEERE

MOLINE · ILLINOIS

Send for FREE Literature

JOHN DEERE • Moline, Ill. • Dept. E62

Please send me free literature on the new John Deere No. 1 One-Row Mounted Cotton Picker.

*Name*_____

*R.R.*_____ *Box*_____

*Town*_____

*State*_____

1

2

3

4

5

6

At Little Rock, July 28-29-30

Photoviews of the Eighth Mechanization Conference

GREATLY IMPROVED, high-speed, labor saving machines showed off their talents before Conference delegates at the field demonstration held July 30 on the Harold A. Young farm. The demonstration was organized and developed by the University of Arkansas department of agricultural engineering and was supervised by Kyle Engler, head of the department.

Machines Pictured

1—Subsoiling, for seedbed preparation. 2—Field cultivator in action. 3—Disking. 4—Planter set to hill drop, place solid fertilizer materials and apply pre-emergence chemicals simultaneously. 5—High-speed hill drop planting. 6—Two-row, side-mounted middlebuster. 7—Drilling by the conventional method. 8—Land leveling and smoothing. 9—Cultivating and applying fertilizer simultaneously. 10—High-clearance sprayer. 11—Stalk shredder in action.

Other machines demonstrated included a flame cultivator equipped with Arkansas burners; rotary hoe; cultivator fitted with post-emergence chemical application equipment and high-speed sweeps; dusters; and a two-row planter that can be adjusted for either hill-dropping or drilling.

Prior to the demonstration, delegates boarded comfortable air-conditioned buses which took them on a well-planned tour of farming areas near Little Rock and adjacent to the Young farm. Following the demonstration, which took place in front of a specially constructed grandstand, the delegates showed great interest in a special display of machines and other equipment which were not demonstrated, including several makes of one- and two-row mechanical harvesters and sprinkler irrigation systems.

(Continued from Page 12)

tion of cotton quality through mechanical production, harvesting and subsequent processes. Most of us are aware of the important role of quality in maintaining a strong and expanding market for cotton.

The breeder has done a commendable job in building more **inherent** quality into cotton. But that better inherent quality **must** be preserved through the production and processing phases until the product reaches the consumer. It's the farmer's responsibility to produce and harvest his cotton in such a way that its inherent quality is preserved for quality ginning. Then it's the ginner's job to process the cotton in such a way as to preserve its inherent quality for subsequent processing. I might also add that it's the warehouse-compressman's job to perform his services in such a way as to preserve the quality in the bale, and it's the merchant's job to perform his services in such a way to reflect adequately true quality differences. And finally, may I add that it's the spinner's job to conduct his operations in such a way as to capitalize on the good raw product that has been made available to him. Unless these jobs are done, many of the breeder's gains in improving cotton's inherent qualities are cancelled out.

As a whole, a fairly acceptable job is being done in the preservation of quality during the production and harvesting processes. However, there are enough poor jobs to be really troublesome to the industry. For example, a mechanical picker becomes choked as the result of any one of several improper pre-harvest practices—or perhaps because of improper operation of the machine itself. When the operator cleans out the dirty, trashy, greasy entangled cotton, what does he do with it? A good operator may put it in a sack which he keeps nearby for that purpose and not allow it to become mixed with other cotton. But too often it is dumped in the picker basket or trailer with good quality cotton where the two together start the long trek to market. You know the rest of the story: Either the low quality cotton shows up in the bale sample and the farmer is penalized immediately, or it is concealed in the center of the bale and causes innumerable processing difficulties.

Here again we see the need for stepped-up action in the broad field of more effective and intensified education. I understand that only last night a small group, representing most of the interests concerned with mechanization, met with a view to (1) discussing the cotton quality preservation problem associated with harvesting and ginning, and (2) agreeing upon a united program of corrective action. That is an example of the intensified action I am suggesting—and **teamwork** must go the whole way with it.

By mentioning these educational approaches, I do not intend in any way to imply that the research groups are unimportant. On the contrary, I believe we all understand that research must precede education—that most research has already been performed for the educational activities we are talking about—that research **must** continue, but that knowledge we're gaining from it today may not show up until next year or several years later.

• **General Objective Same**—Now, what about the general objective of these mechanization conferences? Does the "new era" change it?

Most of us know that the first Beltwide Mechanization Conference was held in 1947, during the early part of the recent spectacular era of mechanization. The general objective was not a machinery show—nor a publicity stunt—nor a goodwill convention. On the contrary, it was to speed up mechanization progress through a better liaison and more unity of purpose among the key groups involved—those groups represented here today. To my mind the general objective of the new era conferences remains the same. The emphasis merely shifts to meet changed conditions.

The mechanization steering committee, in developing the program for this conference, was cognizant of the need for

Gin Helps Seniors Finance Tour

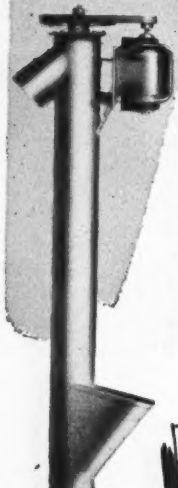
Seniors of Shallowater, Texas, High School finance a class tour each spring through the profits made from serving the banquet at the annual membership meeting of the Shallowater Gin Co. The class this year made a bus trip to Denver and other points with the revenue from serving the meal at the cooperative's meeting. E. B. Teague is president of the gin and R. B. Sport is manager.

Want a Nice Year 'Round Profit...?

Install KELLY DUPLEX feed mill equipment

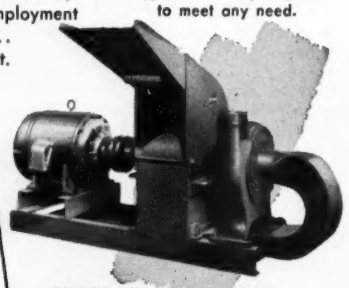
VERTICAL FEED MIXER
Available in 6 sizes ½ to 5 ton capacity—to meet any need.

With grain becoming increasingly more important in the agricultural economy of the South, forward-looking cotton ginners have already adapted their operations to include Kelly Duplex grain handling and processing equipment. They've found that this equipment, designed and built for top efficiency, low maintenance and long life, is able to give them steady, year 'round business and employment ...greatly increased volume... and, above all, a GOOD profit. It can do the same for you!



SCREW ELEVATOR
Custom made to handle your particular conveying problem.

Let us help you . . . plan your program by supplying advice and full details on machinery
Mail the Coupon!



MODEL "M" HAMMERMILL
with direct connected motor

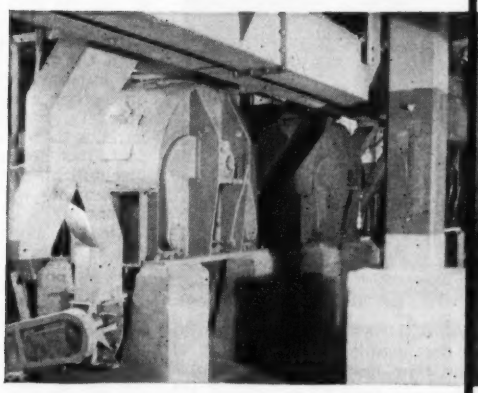
The Duplex Mill & Manufacturing Company
Dept. CG, Springfield, Ohio

Yes, I'm interested in planning a feed mill program. Without obligation, please send me full details on the machines checked.

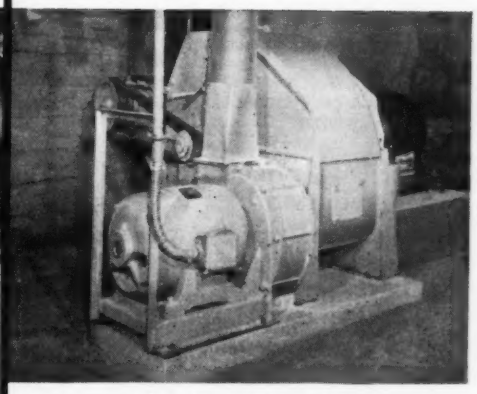
NAME_____
FIRM_____
ADDRESS_____

☐ Vertical Feed Mixer
☐ Vertical Screw Elevator
☐ Molasses Mixer
☐ Cob Crusher
☐ Corn Cutter and Grader
☐ Corn Sheller with Blowers
☐ Regular Corn Sheller
☐ Pitless Corn Sheller
☐ Magnetic Separator
☐ Forced Air Carloader
☐ Model "M" Hammermill
☐ Model "S" Hammermill
☐ Electric Truck Hoist
☐ Corn Scalper
☐ Chain Drag
☐ Attrition Mill Blower
☐ Corn Crusher-Regulator
☐ Grain Feeder
☐ Grain Blower
☐ Complete Line Catalog

Smoothest Running Hammer Mills Ever Built by Bauer



Four Bauer No. 406 Hammer Mills



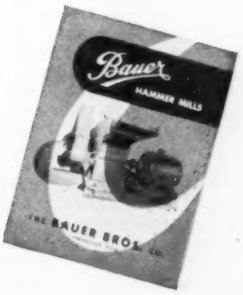
A Bauer No. 216 Hammer Mill

These mills give you the benefits of professional engineering

In a Bauer Hammer Mill you get a machine built and installed for your particular needs. The design, manufacturing, and application are supervised by registered professional engineers who have back of them 75 years of practical experience and research laboratories equipped with commercial machines.

If hammer mills could be better, Bauer would be building them.

Our full line of hammer mills is described in Bulletin H-5-A. Ask for a copy.



THE BAUER BROS. CO.

1701 Sheridan Ave. • Springfield, Ohio

REPRESENTATIVES: M. Neumunz & Sons, Inc. (Export), 90 West St., New York 6. N. Y., A. H. Adams, 144 Pennsylvania Ave., South Portland, Me., T. T. Cowhey, Box 366, Gananoque, Ont., Can., J. Howard Wright, Downingtown, Pa., J. A. LeVan, Box 2065, Springhill, Ala., Industrial Supplies, Inc., Box 36, Memphis, Tenn., F. F. Landis, Charlotte, N. Car., W. C. Cantrell, 1005 Drew St., Fort Worth, Texas, R. R. Dill, 468 Prairie Ave., Elmhurst, Ill., A. E. Thompson Co., 718 Washington Ave., Minneapolis, Minn., Kenneth Wylie, Box 1164, Eugene, Oregon.

a change in emphasis. It felt, for example, that inasmuch as the three previous Conferences were held during the harvest season, this one should be held during the summer when pre-harvest practices could receive greater emphasis. As we all know, progress in the mechanical harvesting of cotton lagged behind for many years, but has made phenomenal strides more recently. Although harvesting practices have a long way to go, none of us want to be guilty of stressing them at the expense of those pre-harvest operations so essential to producing and harvesting cotton of high yields and proper quality.

So, in the planning that led up to this Conference, we can already see a shifting of emphasis. But the basic challenge remains, and I confidently believe this Conferenee will accept that challenge.

Efficient Agriculture For Cotton Belt

■ *By O. V. Wells, Washington, Administrator, Agricultural Marketing Service, USDA*

WHAT IS EFFICIENCY? As regards Cotton Belt agriculture, we must recognize that the definition is necessarily a complex one—that it involves all the various ways by which cotton farmers can most effectively and economically move toward all of the various goals in which they and the industries serving them are interested.

This means that our consideration of efficiency must be a compound of several different elements. Any efficient scheme for Cotton Belt agriculture as a whole, it seems to me, must consider at least the following criteria:

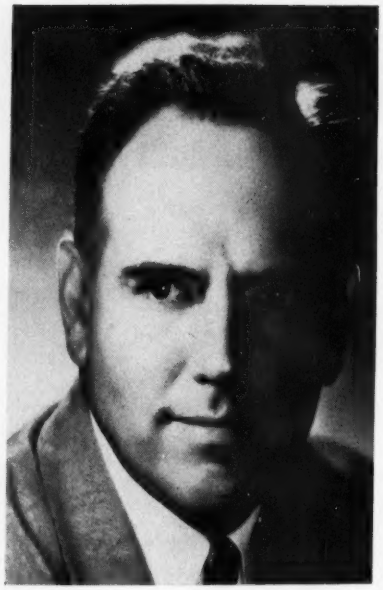
1. An efficient Cotton Belt agriculture must be interested in costs. The annual Cotton Mechanization Conference of course is one device for centering attention on the cost structure. To the extent that costs can be cut or held down, cotton farmers strengthen their ability to sell in competition with substitute products and in foreign markets, as well as their chances for making a reasonable profit.

2. An efficient Cotton Belt agriculture must be interested in effective resource use. This talk is centered around cotton. However, it is clear that the most satisfactory returns for every farmer and for the Cotton Belt as a whole will be obtained when all the land resources of each farm are used effectively—the cropland for those enterprises which are most profitable, the pasture land for livestock, and the woodland for production of commercially desirable trees.

3. An efficient Cotton Belt agriculture must be interested in conservation. An efficient agriculture requires a sound resource base. The Old South and the High Plains areas especially have seen their full share of erosion, exploitation, and mis-use in both farm and woodland resources. All of us can be glad that the Cotton Belt generally is now one of the most conservation-conscious regions of the nation.

4. An efficient Cotton Belt agriculture must be market conscious. Cotton farmers are keenly aware that efficient production alone is not an answer to their problems. Cotton farmers and the cotton industry as a whole must work hard to hold or expand their markets.

5. An efficient Cotton Belt agriculture can exist only as a part of an expanding U. S. economy, within which the cotton areas themselves play a satisfactory role. The main markets for Cotton Belt farm products are off-farm markets. An efficient Cotton Belt agriculture requires the size and kind of markets that go with a fully employed domestic economy and a relatively free flow of foreign trade. Further, solution of the small farm problems depends upon an increasing demand for off-farm employment.



JOHN T. CALDWELL, Fayetteville, Ark., is president of the University of Arkansas. He made the address of welcome at the opening session of the Conference July 28.

It seems to me that in the years ahead, the Cotton Belt's leading cash crops—cotton, tobacco, peanuts, and rice—will continue to have first choice of the better cropland over wide areas. This assumes, of course, that farming practices for these crops keep pace with changes and improvements for crops in other areas and that each crop enjoys a substantially continuing market.

It is important that we realize the basic strength of cotton. Cotton textiles are durable, low cost fabrics which flow into a wide range of essential uses while cotton is also once again a fashionable fabric. However, this is not to say that cotton producers, handlers, and manufacturers should not concern themselves with competition from synthetics and other sources. I have already said that cotton farmers and the cotton industry as a whole must work hard to hold or expand the market for cotton.

Actually, one of the most encouraging elements in cotton's position today is the fact that cotton producers and handlers are keenly aware of their competitive situation — that the cotton industry through research, development, and actual promotion is endeavoring to maintain or increase its market. All this is a healthy development and all the organizations responsible for it deserve congratulations.

I continue to believe that the goal of the industry should be sufficient production to supply around 30 pounds of cotton per capita to our own population. In terms of mill consumption over the next several years, this would mean somewhere between 9 and 10 million bales annually. And I also feel that our exports should hold at or above 4 million bales, as indicated by the prospect that exports may run around 4.5 million bales for the marketing year starting this Aug. 1.

It is within this framework that we today look at the need for greater efficiency in cotton production. But I am sure all of us realize that the problem of efficiency is wider than either cotton or mechanization.

• **What Mechanization Means** — Cotton is usualiy only one of several crops or enterprises on a well-operated farm. Also, mechanization involves far more than the mere substitution of machines for human labor in producing cotton or any other crop; it also involves plant breeders, processors, and others who handle the product. Mechanization, in fact, has become a shorthand term for mechanical, chemical, and biological improvements which must be associated together.

On the average, it appears that cotton farmers have shown as great progress in increasing efficiency of production as have any group of farmers over the U.S. Yields per acre have increased from 186 pounds in the 1930-34 period to approximately 286 pounds in 1949-53. Output per man hour in the production of cotton has increased by about 119 percent, 1953 over 1935, as compared with increased output per man hour for all crops of about 114 percent. I am not suggesting, of course, that the increase in efficiency has been equal as between all cotton farms or between the main cotton producing areas. There have, of course, been wide differences, and there are still some cotton operations which do not readily lend themselves to mechanization.

Aside from cotton, some of the more difficult problems which have faced Southern operators, especially. have had to do with the introduction of livestock, including the development of pasture, and the commercial utilization of relatively small tracts of woodland. As reflected in the South's increased pasture acreage, cattle numbers in particular have increased. Farm receipts from livestock and livestock products generally have come to play an increasingly important role over most of the South. At the same time, the development of pulp mills, as well as increasing timber prices, has led to increasing realization of the possibilities of commercial timber operations. All these are fields in which there is still much to be done.

With respect to this whole problem of Southern farm technology, USDA's chief Southern farm management specialist, E. Lee Langsford, indicated some time ago that based upon their adaptability to improved farming practices, especially labor saving techniques, the crop farming systems in the South might be placed in three broad groups: (1) farming systems featuring enterprises (especially wheat and rice) that are adapted to labor saving techniques; (2) farming systems featuring enterprises (especially cotton) for which mechanization opportunities vary from area to area, and (3) those farms or farming systems (small farms and tobacco farms) for which there are no clear prospects for the immediate adoption of significant labor saving techniques.

Langsford reported that farms in areas well adapted to mechanization but

(Continued on Page 31)

See your

BUTLER

contractor for...

FAST

BOLTED STEEL GRAIN TANK

SERVICE

He can help you build storage facilities now to take advantage of fast tax amortization and storage-use guarantees. Butler bolted steel grain tanks meet the requirements of the U.S.D.A. Commercial Storage Program.

You can have Butler bolted steel grain tanks up and ready to fill weeks ahead of other types of construction. Butler's precision-formed and punched steel sections—plus the construction experience of your Butler contractor's crew—make erection quick and easy.

Fast erection, teamed with the low initial cost of Butler tanks, helps cut your per-bushel cost of permanent storage facilities. Low upkeep of Butler bolted steel grain tanks means further savings. The tank sections are sealed and bolted firmly to assure years of fire-safe, weather-tight storage. A two-coat bond on the heavy-gauge steel sections guards against rust and corrosion.

See your Butler contractor right away! He'll plan new facilities to match your exact needs. And he'll give you a price on a *complete* installation—with Butler bolted steel tanks for fire-safe, low-cost grain storage. Write for the name of your nearest Butler contractor and free folders by mail.

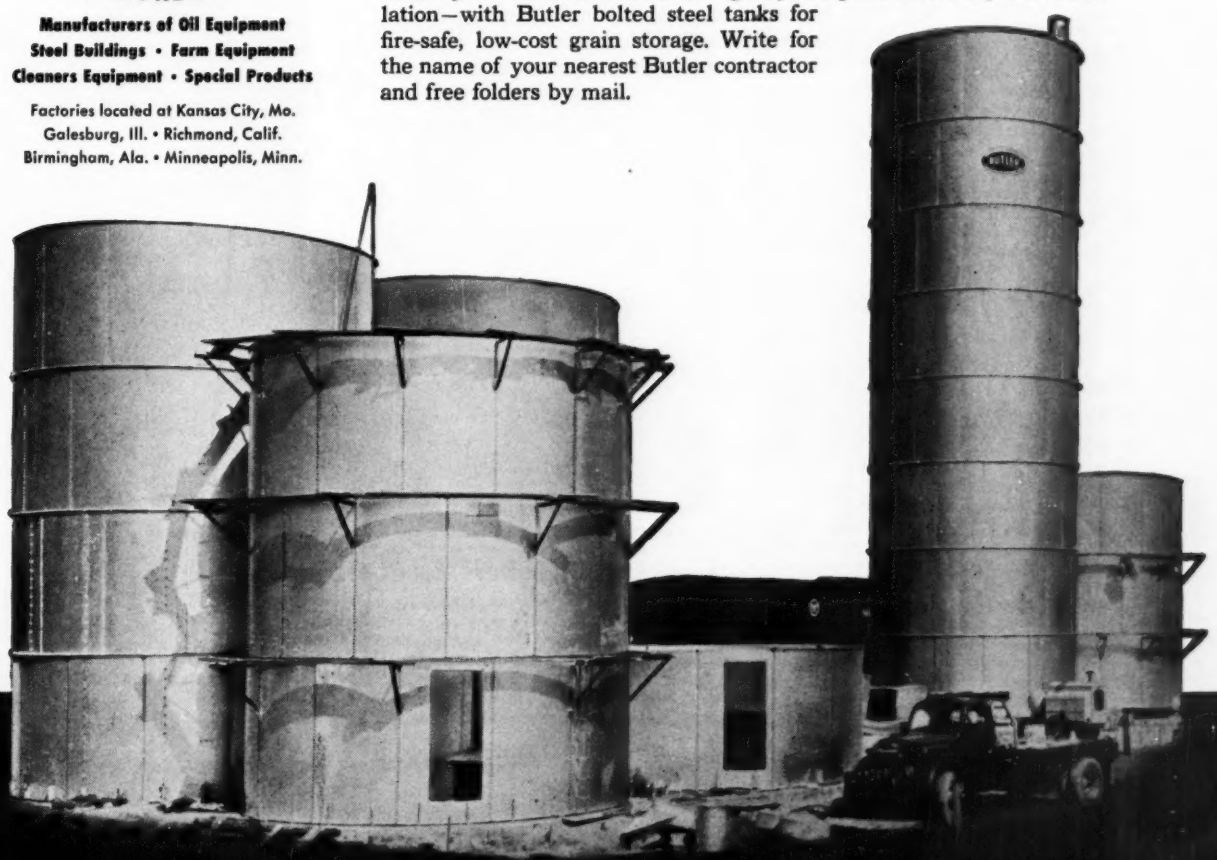
BUTLER MANUFACTURING COMPANY

For prompt reply, address office nearest you:
7391 East 13th Street, Kansas City 26, Mo.
1002 Avenue W, Ensley, Birmingham 8, Ala.
Dept. 91A, Richmond, Calif.

BUTLER STEEL PRODUCTS

Manufacturers of Oil Equipment
Steel Buildings • Farm Equipment
Cleaners Equipment • Special Products

Factories located at Kansas City, Mo.
Galesburg, Ill. • Richmond, Calif.
Birmingham, Ala. • Minneapolis, Minn.



Haslauer New President of Arkansas-Missouri Group

W. H. Haslauer, new president of Arkansas-Missouri Cotton Ginners' Association, has been associated with the cotton industry for 17 years. He is co-owner of Farmers Cotton & Grain Co.,

W. H. HASLAUER

East Prairie, Mo., and of Mikco Grain Co., Cairo, Ill.

Haslauer was vice-president of the Association and, as reported in the last issue, became president following the death of President J. J. Fletcher of England, Ark., last month.

Haslauer started with Swift & Co. at Cairo as a seed buyer at the age of 20. After World War II he and P. M. Barton, Catron, Mo., acquired the East Prairie installation and went into the ginning and farming business. In 1950 they bought the Mikco Grain Co. at Cairo.

During the war Haslauer served with the Eighth Air Force, was shot down over Hamburg and interned in Sweden for seven months.

He, Mrs. Haslauer, and their three daughters moved in July to Cairo from East Prairie, after the Mikco Grain Co. was enlarged to handle some 600,000 additional bushels of grain. He is still active in the cotton and farming operations across the state line in Missouri. Haslauer lists his hobbies as goose and duck hunting.

Georgia Extension Names Eight New Employees

Eight new employees of the University of Georgia Extension Service have been announced by W. A. Sutton, associate director.

W. Harold Gurley and John Preston were named new assistant agronomists, and John E. Noland is a new assistant state 4-H Club leader. Two new Extension poultrymen, Jack R. Palmer and Jim Thaxton, have been employed. Cecil Blackwell has accepted the post of assistant horticulturist, and Charles R. O'Kelley has taken over as associate economist. The new Southcentral district agent is C. E. Johnson, Jr.

• Japan Must Import For Many Years

JAPAN will require large agricultural imports to meet its food and fiber needs for a long time in the future, according to an article in USDA's publication, Foreign Agriculture.

Japan's own agriculture is not producing as much of that country's requirements as it did before World War II. Japan now produces only about 80 percent of the food needed, as compared with the prewar average of 85 percent. Total Japanese farm production has risen compared with prewar, but population, now estimated at 87 million, has been rising at the rate of more than one million a year. At the same time, further increases in Japanese agricultural output will be difficult to achieve.

Japan became America's best customer for farm products in 1952 after having held second place for the four years 1948 through 1951. Export figures for 1953 indicate that Japan again ranked at the top of the list of the U.S. agricultural markets for that year. In 1952 Japan was the leading foreign buyer of U.S. cotton, rice, soybeans, tallow, barley and hides. The U.S. in fact, was the major source of Japanese imports of cotton, soybeans, tallow and hides, and the second most important source of rice and barley.

About two-thirds of Japan's imports are agricultural. Latest figures place the total annual value of Japanese agricultural imports from this country at $487 million compared with total agricultural imports of $1,343,000,000. Facts related to Japan's need for certain major U.S. farm products are summarized by USDA as follows:

• **Cotton**—The Japanese war-damaged cotton textile industry has made a vigorous recovery, although it has been rebuilt only to two-thirds of prewar, and Japan has become the world's largest importer of raw cotton and the leading exporter of cotton goods. Its mills use modern machinery to a large extent. Whether prewar levels of textile production and cotton imports will be reached, however, will depend upon the ability of the industry to market its output at home and abroad. Imports from the U.S. totaled about 600,000 bales in 1953.

• **Rice**—Today, as before World War II, Japan is the world's largest importer of rice, although the proportion of total trade in rice moving into Japan has declined from 20 percent to about 15 percent. During each of the past two years Japanese rice imports have been slightly more than one million tons of milled rice.

While rice from the U.S. tends to be priced higher than that from other sources, the Japanese find that because of sound U.S. grading and trade practices, they can depend on receiving the grade for which they contract.

• **Wheat**—Because of the short supply of rice since the war, Japan has become the fourth most important wheat importer, taking about 1.8 million tons annually. The U.S. has shared significantly in this trade. For the years immediately ahead, Japan's annual wheat import needs may be about two million tons.

• **Soybeans**—Japan's soybean imports have approached 300,000 tons, more than 90 percent of which have come from the U.S., and it seems probable they will continue to do so during the next few years. Whether the U.S. can retain its present share of the market will depend upon prices and quality of beans available from other sources. Before World War II, Japan obtained large quantities from Manchuria.

• **Tallow** — Exports of U.S. tallow, principally inedible, to Japan broke all records in 1953.

W. P. HAYNE

H. L. TAYLOR

Louisiana Crushers Elect Officers

W. P. HAYNE, Alexandria, was elected president of the Louisiana Cottonseed Crushers' Association Aug. 7 at the annual meeting in New Orleans, and H. L. Taylor, Shreveport, was named vice-president. Association directors elected at the meeting included J. P. Barnet, Jr., Opelousas; S. M. Hart, Natchitoches; R. L. Taylor, Arcadia; Roy Blaine, Shreveport; and Jules Cazayoux, New Roads. T. H. Gregory, Memphis, and Dalton E. Gandy, Ruston, La., were National Cottonseed Products Association representatives at the meeting.

Announced by Council

Butler Heads Pink Bollworm Group

■ EDITOR appointed chairman of Beltwide organization mapping fight on cotton pest.

One of the Cotton Belt's leading farm magazine executives and agricultural leaders has been named chairman of the Beltwide Pink Bollworm Committee. He is Eugene Butler, Dallas, president of the Progressive Farmer and editor of the magazine's Texas edition. His acceptance of the position was announced Aug. 10 by Claude L. Welch, director of production and marketing for the National Cotton Council.

Butler succeeds the late George A. Simmons of Lubbock as chairman of the Pink Bollworm Committee, which was organized by the Cotton Council in 1951.

EUGENE BUTLER

The committee made a technical appraisal of the pink bollworm threat, and, in 1952, outlined a program to combat it. Chief recommendation of the group was a five-year expanded research program, set up to cost a minimum of $1,250,000.

A program growing out of this recommendation is already well under way, financed jointly by the federal government, the cotton industry, and by several cotton states. A Pink Bollworm Research Center was established last year at Brownsville, Texas, and was the subject of a staff article in The Press.

The Beltwide committee's continuing job is to make a constant re-appraisal of the pink bollworm situation, and to make recommendations for action to all groups concerned. The first committee session to be presided over by Butler probably will be held next month in Dallas.

Butler has many friends in the crushing and ginning industries who will join the staff of The Cotton Gin and Oil Mill Press in appreciation of his acceptance of this added responsibility. He has been chairman of the insect control committee of the Statewide Cotton Committee of Texas since it was organized. Butler was elected president of Progressive Farmer in 1953 and, earlier in the same year, received the Hoblitzelle $5,000 Distinguished Service Award for agricultural leadership. He has been active in developing and serving in many local, Southern and national agricultural organizations. Butler has also represented American agriculture on missions to South America and Europe.

- **Make Fire Prevention a Habit: Train employees for emergencies. Maintain fire control equipment. Establish a daily clean-up routine.**

• Synthetic Capacity To Rise Sharply

WORLD CAPACITY to produce synthetic fibers will be about 6.7 billion pounds by the end of 1955, approximately 10 percent greater than in March 1954, USDA estimates. Rayon and acetate capacity will be about 7 percent larger than in 1954, while capacity for producing the newer synthetics will increase some 40 percent.

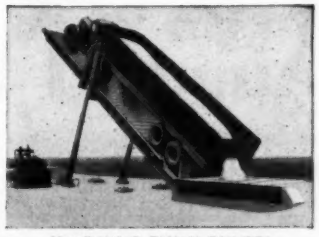
About 57 percent of the total increase in capacity for the newer synthetics will occur in the U.S., where about 10 percent of the rayon and acetate expansion also will take place.

World production of synthetic fibers in 1953 was estimated by Textile Organon at a record high of 4.5 billion pounds.

With a Kewanee TRUCK DUMPER

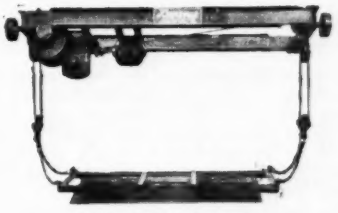
You can dump 200 Trucks in 10 Hours (Averaging 500 to 600 Bushels per Truck)

Compare that with what you are doing today! "Kewanee" performance and economy are overwhelming. **You save time — work — money!** Regardless of the size of your mill, you cannot afford cumbersome unloading methods. "Kewanee" Truck Dumpers handle all sizes of trucks and tractor trailers. There is a size to suit your plant. Write us today for full information.



HYDRAULIC TRUCK DUMPER

Takes all the time-consuming hard work out of unloading, eliminates "waiting time."
- Unloads all sizes of trucks and big Tractor Trailers.
- Sizes—25', 45', 50' and 60' Platforms. Other sizes special.
- Capacities to 100,000 lbs.
- Scale and Non-Scale Types.
- Twin Hydraulic Power Units.
- Pit and Pitless Models. Pitless reduces foundation costs.



OVERHEAD TRUCK LIFT

Engineered for easy operation and dependable performance.
- Adjustable for driveways 10' to 15' wide.
- Low Head Room.
- Large, deep flanged winding drums. Uniform winding.
- Cut Worm Gear Reducer.
- Crucible Steel Lifting Cables, extra flexible.

FLEXIBLE LOADING SPOUTS

Offer great flexibility to fill far ends of cars or barges. Patented renewable bottoms of abrasion-resistant steel give spouts long life and effect real savings.

A remarkable feature in Kewanee Spouts is that they always align themselves so the Renewable Bottoms are down. They take all the wear!

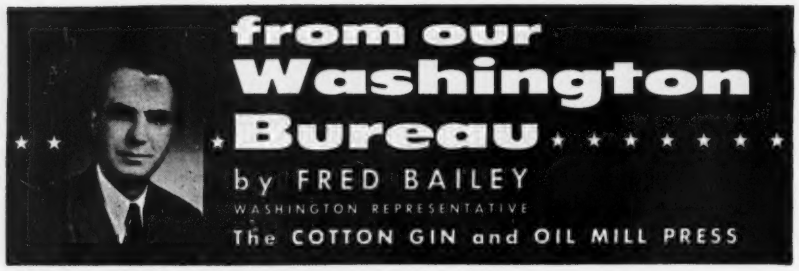
GRAIN GRATES

Kewanee Grain Grates are made of ½" by 3" bars fitted into slanted slots in support castings. This provides strength, rigidity and makes it easy to remove any number of bars for entry into the pit. Slanted grate bars insure positive flow of all grains into pit.

Whatever your material handling problem, we can help you solve it.

Screw Conveyor Corporation
ENGINEERS — HAMMOND PRODUCTS — MANUFACTURERS

Write for information on our complete line of conveying equipment.



• **Flexible Supports Pass**—Flexible price support next year was assured by a vote of approval in the Senate just as we went to press. Five basics are to be propped, with levels varying from 82½ to 90 percent of parity. Here are rounded estimates of levels in '55: cotton, 90 percent due to set-aside provision; peanuts, corn and wheat, approximately 85 percent; rice, slightly below this year; tobacco, flexibility not at issue, support remains at 90 percent. Both houses have approved 82½ to 90 percent range.

• **Still Big Issue**—Look for the battle royal over price supports to continue through the fall, and into next year. What's happened, say Capitol Hill sources, is only a skirmish compared with what is to come. Bitter feelings, engendered in the congressional fight this year, are not to be forgotten.

Outcome of elections in farm areas will be watched carefully. If either backers of 90-percent supports or those who favor flexibles suffer big vote losses, you can look for loud outcries of "I-told-you-so."

Upshot likely would be another fight in Congress next year over the price support issue.

• **Benson Will Campaign** — Agriculture Secretary Benson has surprised a lot of politicians with his announcement that he means to campaign this fall for selected GOP candidates — in selected areas. Whether he will venture into the South is a $64 question.

On hearing news of the Secretary's campaign plans, one Southern lawmaker, who opposes his policies, said, "that's the best news yet." Other Southern legislators also indicate they think Benson's opposition would help them win re-election.

There are those in the South, on the other hand, who disagree. Benson's flexible price-floor program has had important support in a few Southern States, such as Virginia and Florida.

• **No Miracles**—How much will cotton exports be helped by Public Law 480, the new Agricultural Trade Development and Assistance Act of 1954? Some, say trade sources here, but don't expect miracles.

While the law is looked upon by agricultural and trade leaders as the best in a long time—in terms of foreign export possibilities—there is a limit to what any legislation can do.

The new law, theoretically, will be used to move food and fiber that otherwise could not be moved. Practically speaking, however, say insiders here, some exports under its provisions will meet foreign demand that would have been met anyhow.

Main features of the new law are these:

(1) It allows USDA's Commodity Credit Corporation to finance sales of surpluses for foreign currencies up to a total cost of $700 million in the next three years. There is in Washington a quiet understanding that the amount authorized will be increased any time this is deemed helpful.

(2) The law also opens up new opportunities for the U.S. to barter surpluses for strategic materials. Farm and trade leaders here think that this provision has considerable potential.

(3) There is a "sleeper" in the law that may arouse opposition of margarine interests. It allows expenditure of up to $300 million in the three-year period not only for foreign aid and famine relief—but also to step up domestic consumption of U.S. surpluses in school lunches, and by public institutions. Under this provision, the Administration can subsidize larger give-aways of butter.

• **Tax Law Changes**—Changes in tax law should be noted . . . can save money on this year's income and thereafter.

Assets purchased since last Jan. 1 now may be depreciated at a faster rate. If the asset—such as a building, machinery, or equipment—was purchased new, and will last for three years or more, you can depreciate it according to a new "declining balance" system. This allows you to get back in tax-free income about two-thirds of the asset in one-half of its useful life.

If your medical and dental bills are high, and you itemize them instead of taking the standard deduction, you can save on taxes—this year as well as later. These costs, in excess of three percent of your "adjusted gross income" (income left after expenses), now can be deducted. In the past, only medical and dental expenses in excess of five percent of income have been deductible.

There probably are other ways you can save money. Changes in tax law are the most far-reaching to be made by Congress for many years.

Cotton Promotion Group Meets in North Carolina

On Aug. 12 subcommittees of the North Carolina State Cotton Promotion Committee met with the executive committee.

Subcommittee members include the following:

Legislative: T. B. Upchurch, chairman; Robert Morgan; A. C. Edwards; W. W. Andrews and Walter Lowry.

Finance: G. D. Arndt, chairman; John W. Clark; Paul Keller; T. H. LeCroy and A. D. Williams.

Education and Membership: M. W. Tilghman, A. L. Teachey, Fred Johnson, R. L. Cooper, B. B. Everette, Jr., L. Clyde Latham and J. A. Shanklin.

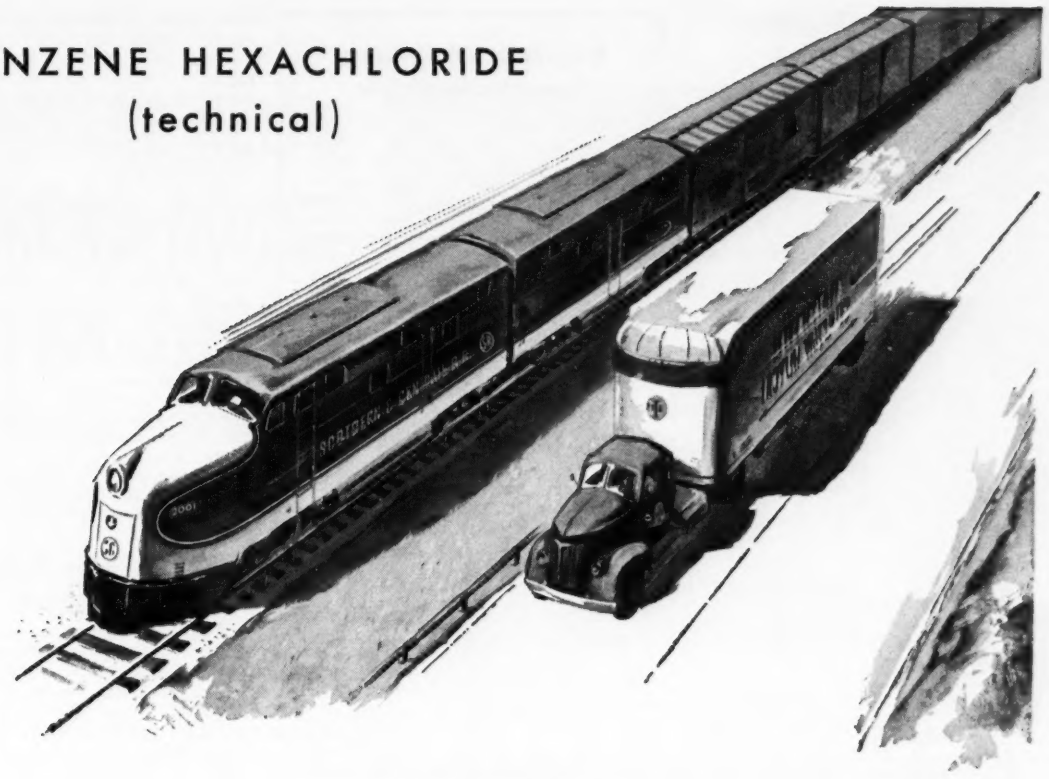
August 1 Cotton Report

A U.S. cotton crop of 12,680,000 bales is indicated by Aug. 1 conditions, USDA reports. This compares with the 16,465,000 bales harvested in 1953 and the 1943-52 average of 12,448,000 bales. Prospective yield per acre is estimated at 313.5 pounds, exceeded only by the record high yield of 324.2 pounds harvested in 1953. The 1943-52 average yield was 272.1 pounds per acre harvested. American-Egyptian cotton production is indicated at 25,200 bales compared with 65,500 in 1953 and the 10-year average of 29,200 bales. No estimate of cottonseed production is made until final ginnings for the season are released; however, if the ratio of seed to lint is the same as the past five-year average, production would be 5,201,000 tons. This compares with 6,748,000 tons in 1953. Details by states follow:

State	Acres in Cultivation July 1, 1954, less 1944-53 Average Abandonment[1]	August 1 Condition			Lint Yield per Harvested Acre			Production[2] 500-Lb. Gross Wt. Bales		
		Average 1943-52	1953	1954	Average 1943-52	1953	1954 Indicated Aug. 1[3]	Average 1943-52	1953	1954 Indicated Aug. 1
	Thous. Acres	Percent			Pounds			Thous. Bales		
North Carolina	577	79	79	82	340	278	333	506	449	400
South Carolina	865	76	78	67	312	281	291	693	690	525
Georgia	1,116	72	75	62	252	262	219	705	752	510
Tennessee	660	76	85	77	357	354	375	544	702	515
Alabama	1,223	74	79	71	286	285	294	907	963	750
Mississippi	1,921	76	84	84	336	410	412	1,664	2,129	1,650
Missouri	450	76	83	84	368	386	416	343	449	390
Arkansas	1,690	75	80	77	332	358	369	1,343	1,548	1,300
Louisiana	693	74	76	77	327	407	405	585	806	585
Oklahoma	941	73	85	65	152	205	143	385	437	280
Texas	7,688	76	70	73	182	233	212	3,239	4,317	3,400
New Mexico	205	92	89	95	498	497	550	195	327	235
Arizona	414	92	93	97	555	743	870	387	1,070	750
California	902	93	86	97	624	632	718	905	1,768	1,350
Other States[4]	71	79	75	80	288	242	267	47	58	40
United States	19,416	77	79	78	272.1	324.2	313.5	12,448	16,465	12,680
Amer.-Egypt.[5]	32.9	—	—	—	344	340	368	29.2	65.5	25.2

[1]From natural causes. [2]On acres in cultivation July 1 less 1944-53 average abandonment. [3]Production ginned and to be ginned. A 500-lb. bale contains about 480 net pounds of lint. [4]Virginia, Florida, Illinois, Kansas, Kentucky, and Nevada. [5]Included in state and U.S. totals.

BENZENE HEXACHLORIDE
(technical)



get it faster
when you need it most!

Rain falls . . . and demand for "3-5-40" dust goes up!

When that happens, be ready to supply your customers fast. Ethyl's new BHC plant at Baton Rouge, Louisiana is only an arm's length from your telephone . . . only hours away by rail or motor freight. That means overnight service for most cotton dust formulators. Quick, dependable delivery of top quality BHC in time to make the sale you might otherwise lose.

Farmers know, trust and demand "3-5-40". It's the biggest selling cotton insecticide in use today. So don't get caught with your stocks down. Call, write or wire Ethyl and order your BHC *today*. We'll ship you all you need . . . promptly . . . at a fair price and in time to meet your market.

ETHYL CORPORATION
Chemicals for industry & agriculture

100 PARK AVENUE, NEW YORK 17, N. Y.

ATLANTA, BATON ROUGE, CHICAGO, DALLAS, DAYTON, DENVER, DETROIT, HOUSTON, KANSAS CITY, LOS ANGELES, NEW ORLEANS, PHILADELPHIA, PITTSBURGH, SALT LAKE CITY, SAN FRANCISCO, SEATTLE, TULSA, MEXICO CITY AND (ETHYL ANTIKNOCK, LTD.) TORONTO.

ETHYL
BENZENE HEXACHLORIDE
ETHYL CORPORATION

• Texas Water Problem Discussed by Bank

TEXAS' water problem is discussed in a recent issue of Monthly Business Review, published by the Federal Reserve Bank of Dallas.

Surface supplies, Philip E. Coldwell, the bank's director of research, points out, are becoming more important, since water consumption by all types of users is increasing rapidly and underground reserves are dwindling.

There is, he continues, an abundance of water in the rivers of Texas which could be used to a great advantage. From all streams in Texas, an average total of over 53 million acre-feet of water is available each year.

There are at present 523 lakes and reservoirs completed or under construction in Texas. Storage capacity of these totals about 29 million acre-feet of which 19 million acre-feet are reserved for hydroelectric power and flood control, 5 million acre-feet for municipal and domestic water supplies; 3 million acre feet for irrigation purposes and 500,000 acre-feet for manufacturing and industrial water supplies. The rest is held for recreation and dead storage. At present, 85 percent of the runoff of Texas rivers passes unused into the Gulf of Mexico.

Thirty-four of these 523 lakes and reservoirs account for 84 percent of total state capacity. The bulk of the storage capacity is located in Central and North Central Texas. Reasons for this concentration include the number of large rivers in this section which lend themselves to reservoir construction, the density of population and high land value, and local financial backing.

Before any river development can be undertaken, the bank explains, an agreement must be reached as to how the water will be used. By law, order of priority is as follows: domestic and municipal uses, industrial uses, irrigation, mining and the recovery of minerals, hydroelectric power, navigation, and recreation and pleasure.

In practice riparian rights or prior appropriation rights and the financial ability to pay for storage capacity are more likely to be the major considerations in determining the allocation of most surface water.

• **Government Agencies** — Responsibilities of various agencies working with the water problem are not clearly defined. Generally, the U.S. Corps of Engineers is the construction agent for flood control and navigation projects. The Bureau of Reclamation constructs conservation, irrigation, water supply and hydroelectric power projects.

The Soil Conservation Service is responsible for the development of upstream retention of dams and the improvement of soils to limit water runoff. The International Boundary and Water Commission, composed of representatives of the U.S. and Mexico, controls the Rio Grande River. The Federal Power Commission is the consultant for the development of hydroelectric generating capacity in river projects.

In Texas, no single water agency is authorized to act for the entire state, either as to contracts with the federal authorities for the construction of river improvements or as to coordinated planning of such improvements.

Costs are apportioned as to the purposes for which they are constructed. If flood control and navigation are the major purposes of construction, the federal government pays most of the cost. If power generation is the major purpose, specific power generation costs and a part of the general costs must be paid for by power sales. Irrigation water users must pay their share of construction costs, etc.

Determining who will pay the costs has often been a deciding factor as to the purpose for which the dam and reservoir is intended. The federal government has in the past paid a large part of the bill because a large part of the reservoir capacity has been devoted to flood control. If local interests want more water for municipal and industrial supplies, they will have to pay a greater portion of the cost, the bank report says.

Single-purpose construction versus multiple-purpose construction has been a subject of controversy in the past and has considerable meaning in the current Texas problem.

Future development is faced with several difficulties. There is, for example, a great difference between operating a dam and reservoir for flood control and operating it for nearly any other purpose.

The bank report says, however, that only two major problems cannot be solved by coordination. One of these is the fact that flood-control operation does not allow for coordinated use of the same storage capacity. The other is the fact that reservoir operation for hydroelectric power generation requires water releases when demands for electricity are at a peak and not necessarily when downstream users need the water.

Reprints of Gregory Speech Available

Crushers and ginners can give farmers and the general public the facts about cottonseed price supports and the loss of markets for cottonseed products. These facts are ably summarized in an address by T. H. Gregory, Memphis, National Cottonseed Products Association executive vice-president, which was published July 31 in The Cotton Gin and Oil Mill Press. Copies of this timely address may be obtained from the Association's office, 19 South Cleveland Street, Memphis 4.

This address, The Producers' Stake in Markets for Cottonseed Products, is information which ginners and crushers would like for every cotton grower to read—but this is possible only if crushers and ginners distribute the information to producers in their local areas.

Diseases May Control Insect Nuisances

USDA entomologists are looking hopefully to the comparatively unexploited field of insect diseases to control some of agriculture's insect enemies.

Three promising fields of basic research in this area are a bacterial disease of the pink bollworm, a virus disease of armyworms and a fungus disease that is deadly to several insects.

Residues from treating a field with insect diseases would seldom be a problem, scientists say, because most of these diseases are harmless to man, animals and plants. Moreover, these diseases generally kill a single species without harming others; whereas, many insecticides are harmful to both pests and beneficial insects.

Swift Has New Sales Division

JAMES C. PRAHL, left, will be sales manager and Gene Williamson, right, his assistant in Swift & Co.'s new central sales division in Memphis. Cottonseed and soybean meal produced by the company's mills at Memphis, Blytheville, Ark.; Portageville, Mo., and Little Rock will be sold from the new office, which will operate under the immediate supervision of the Southern Division. E. F. Czichos is manager of the Southern Division, with headquarters in Memphis.

TOXAPHENE HELPS FARMERS BOOST COTTON YIELDS

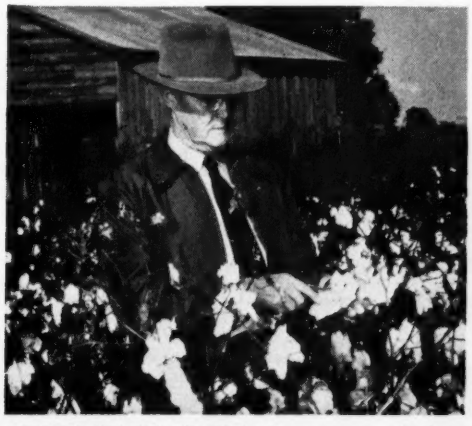
with late season control

Many farmers are finding that insecticide applications in late season bring enough extra cotton to more than pay for the entire season's poisoning program. And top producers everywhere agree that toxaphene is the ideal insecticide for dependable protection all season long.

Toxaphene dusts or sprays are economical and provide the quick control of boll weevils, bollworms, and leafworms that is important in late season. Toxaphene's residual action gives you the long-lasting protection your cotton needs between applications. Toxaphene continues to work even during changeable weather.

Don't take chances at this late date. Be sure you have a supply of toxaphene insecticides on hand.

TOXAPHENE ON FIRST BALE—Ray Barnick, left, Mission, Texas, shown with the first bale of U. S. cotton. On the right is G. W. Anderson, Valley Growers Co-op, insecticide supplier. Winner of the first bale contest for three years in a row, Mr. Barnick, like leading growers everywhere, uses toxaphene throughout the season to protect his cotton, and help produce maximum yields.



TOXAPHENE PROTECTS TOP CROP—Minga Lawrence, who farms near Greenwood, Mississippi, examines his high-yielding cotton. "We used toxaphene all the way through 1953, and found that it controlled boll weevils and bollworms very satisfactorily," says Mr. Lawrence. Control of insect pests in late season protects bolls at top of plants—to add extra pounds of lint per acre.

TOXAPHENE FOR LONGER PROTECTION — Royce Calhoun, Vienna, Georgia, is one of Dooly County's top cotton producers. He reports that more and more farmers in his area are turning to toxaphene insecticides. "We get better results with toxaphene," he says. "It lasts longer and does a better job than any dust we've used."

TOXAPHENE dusts · sprays

THE CHEMICAL BASE FOR TOXAPHENE IS PRODUCED BY HERCULES FROM THE SOUTHERN PINE

Naval Stores Department
HERCULES POWDER COMPANY
INCORPORATED
943 King St., Wilmington 99, Del.
Plants at Brunswick, Ga., Hattiesburg, Miss. Offices at Atlanta, Birmingham, Brownsville, Dallas, Los Angeles, Raleigh
NAS4-23

as viewed from The "PRESS" Box

• Must Show Aid Needed

STOCKMEN who can afford to pay market prices for feed will not be eligible for drouth-relief feed. USDA announced that the standard for such aid this year will be: "if the farmer or rancher did not get assistance he would be forced to liquidate part or all of his foundation herd." As previously reported here, this matter of proving financial need was hotly debated last year. USDA also has announced that feed mixers and dealers will participate in grain distribution to drouth areas.

• Crushers in Washington

COTTONSEED CRUSHING leaders were in Washington July 26-27 to discuss problems with USDA officials. On July 26 a conference was held on linters standards, with industry representatives approving new linters standards boxes. National Cottonseed Products Association's Washington committee met with USDA representatives July 27 to discuss disposal of CCC cottonseed products stocks. Recommendations included continuation of the 1953-54 policy on domestic cottonseed oil sales, and that the CCC domestic sales policy on linters be followed on foreign sales.

A LOOK AT THE
Records of Delfos 9169
Out of Stoneville . . . The Finest Cotton for MECHANIZATION
RECORD Planting
RECORD Yield
PLUS THESE EXTRAS
• • • A Record number of planters placed their confidence in DELFOS 9169 this year! Increased Mechanization—Decreased acreage are the TWO important Reasons! Here's WHY:
• • • Winner of the WORLD'S RECORD YIELD. THREE out of five years this famous cotton has won the Mississippi 5-Acre Contest . . . Record on Farm Production from the Rio Grande to The Mississippi Valley.
• • • DELFOS 9169 is acclaimed for adaptability to Mechanical Picking • Extra Staple • Extra early maturity . . . and the important "extras" of an upright plant and its ability to stay in the boll! Next year plant DELFOS 9169 and you, too, will plant the BEST—for mechanization AND Extra Profit!
ORIGINATORS AND BREEDERS
STONEVILLE PEDIGREED SEED Company
STONEVILLE, MISSISSIPPI

• Margarine Uses Milk

A RECORD 215 million pounds of skim milk and skim milk powder were used in margarine in 1953, according to S. F. Riepma of the National Association of Margarine Manufacturers. Skim milk makes up approximately 16 or 17 percent of margarine, by weight, Riepma emphasizes.

Farm products, he added, contributed more than 1,250,000,000 pounds of the 1,295,000,000 pounds of margarine in 1953. These included 726 million pounds of soybean oil and 275 million pounds of cottonseed oil.

• Oil Meal Cheapest

PROTEIN CONCENTRATES and hay are needed as supplemental feed by cattle on drouthy ranges, Texas Extension Animal Husbandman U. D. Thompson reminds ranchmen. "Oil meal products are the cheapest source" of protein, Thompson comments, adding that about two pounds of a 41 percent protein product usually are needed daily per animal, although amounts will vary.

• Loan Rate Is Higher

AVERAGE LOAN RATE for 1954 upland cotton, basis Middling 7/8 inch, is 31.58 cents per pound, USDA announced July 31. This is higher than the minimum loan level of 31.25 cents which had been announced last March 3. However, the loan rate on extra long staple cotton remains at the minimum rate previously announced.

• Georgia Selects Maid

GEORGIA's Maid of Cotton contest was held Aug. 13-14 at the Bon Air Hotel, Augusta, climaxed with an elaborate cotton ball on Saturday evening. The winner, who had not been selected when we went to press, will represent the state in the national contest in Memphis next January.

• Better Yarn Test

SOME COTTONS now being rejected as weak in conventional flat-bundle strength tests will actually spin into satisfactory yarns, according to research conducted for USDA at Clemson College, Clemson, S.C. More correct ranking of cottons in terms of the yarns to be spun from them is gained in flat-bundle measurements if the jaws of the tester are spaced two to four millimeters apart—instead of touching, as generally practiced.

• Urbiculture Department

A BILL to establish a Department of Urbiculture comparable to USDA has been introduced in Congress by Representative J. Arthur Younger of California, who says the country needs a Cabinet-level organization devoted to the problems and welfare of city people.

When USDA was set up, he says, 75 percent of the country's population lived on farms; now this proportion lives in the city.

Conference Proceedings

(Continued from Page 22)

below minimum size for economic use of key machines would probably tend to increase in size over the next several years. Medium and large size farms not adapted to full mechanization would tend to reduce acreage in cotton and increase production of other crops and enter or expand livestock enterprises, which might mean some further increase in size. Meanwhile, small cotton farms are expected to continue to decrease in number as nonfarm employment opportunities become available to people living on these units.

In an effort to get some estimate of the cotton acreage which may be generally suited to mechanization, we have calculated that farms which were 100 acres or larger in geographic areas which are generally considered suited to mechanization produced about 58 percent of the crop in 1949.

In general, systems of farming which feature livestock enterprises use a relatively low ratio of human resources in comparison with the other resources employed. At present, production efficiency in livestock enterprises in the South is comparatively low. It must be increased if livestock is to have its proper place in the agriculture of the South. Both research and actual practice are moving in this direction. Moreover, the large acreage of Southern farmland not used for crops, the possibility of pasture improvement, and the prospect for a continuing relatively strong demand for livestock and livestock products are all in favor of further development.

This brings me to one of the basic criteria I stated in the beginning—that **an efficient Cotton Belt agriculture can exist only as a part of an expanding U.S. economy, within which the cotton areas themselves play a satisfactory role.** Here again, the outlook on the whole is good. Southern urbanization and industrialization have been increasing at a relatively rapid rate in recent years. Some of the nation's most efficient industrial plants are in the South. Also, Southern farm population has decreased nearly a fourth since 1930, or at about double the rate for the rest of the U.S. These trends have two important effects: They increase the demand for locally-produced meat, eggs, fresh fruits and vegetables, since they mean more consumers in the cities and towns with higher income; they also tend to reduce the supply of farm laborers or to raise farm wages. On first thought, this may not seem to be an altogether desirable development. But the gradual increase in employment opportunities and incomes means better markets on the one hand. And, on the other hand, it means increasing interest in the possibilities of machines, fertilizers, insecticides, improved seeds, and all of the other items which go into the development of a modern efficient agriculture.

In conclusion, I want to outline two approaches which I believe cotton farmers and the cotton industry can take to assure an efficient agriculture in the several areas of the Cotton Belt:

1. By being actively interested in research and related activities, especially extension work. To make the activities of the state colleges, the U.S. Department of Agriculture, and other organizations most valuable, cotton farmers and representatives of other segments of the cotton industry must help direct research efforts toward relevant problems

Bigger cotton yields with **ARAMITE®**

Bales of extra dollars for you!

This season, include Aramite, *today's safest strongest mite-killer,* in your insect control program and count on a bigger, better cotton crop. Your profits will be greater and your reapplication costs fewer because Aramite keeps its mighty mite-destroying powers longer on your cotton plants.

Field-proven Aramite gives excellent knockout of the deadly Red Spider Mite as well as outstanding control of every mite type that preys on cotton. It is easy to apply, *mixes well with sulphur* and is *not dangerous* to humans, animals, bees, mite-killing insects, adjacent crops.

Order Aramite or formulations containing Aramite from your local supplier today and watch your profits grow.

50th ANNIVERSARY 1904 1954 NAUGATUCK CHEMICAL

Naugatuck Chemical

Division of United States Rubber Company

ELM STREET, NAUGATUCK, CONNECTICUT

producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap.

and see that they are carried out on an adequate scale. If this kind of interest exists, it not only helps the researchers themselves but equally insures that their results and conclusions will be tested and, if practicable and profitable, readily adopted.

2. By cooperative effort on the part of all segments of the cotton industry to encourage research, lower costs of production, and widen the market for cotton and its products. One of the most difficult problems in the whole agricultural field has to do with the way in which a complex industry, such as the one represented by cotton producers and the various people who handle, process, and sell cotton and cotton products, develops ways of working together toward a common end. And as I indicated earlier, one of the most encouraging elements in cotton's position today is the fact that cotton people are keenly aware of their problems and have found ways of working together.

Nothing Slow About These Fellows

No one will ever be able to accuse the folks in Lubbock, one of the nation's leading cotton and cottonseed crushing centers, of being slow. Since a recent meeting of the City Commission, you can drive a horse any old speed you like, in Lubbock.

Someone found a 1909 ordinance regulating horsedrawn vehicles and limiting the speed to eight miles per hour. After considerable horseplay, the Commissioners voted to repeal the ordinance.

Panel Discussion:

Pre-Harvest Mechanization—Progress, Problems, Needs

■ *Eugene G. McKibben, Beltsville, Md., Chief, Agricultural Engineering Research Branch, USDA, panel leader*

AS WE START digging into the details of pre-harvest mechanization, there is one thought which I believe we should keep constantly in mind:

It is highly improbable that there will ever be one universally best system of cotton mechanization because the details of the most effective cotton mechanization for a particular field are greatly affected by variety, soil type, topography and climate, in fact even the quality of labor and management available.

Cotton mechanization, to be most effective, must be a coordinated and integrated program, including residue disposition, land preparation, planting, fertilization, cultivation and weed control, insect and disease control, and harvesting and ginning. Even minor changes in any one of these operations may result in the need for a major change in any one or even several of the others.

Of course, progress is made by finding and perfecting improvement of an individual operation such as planting under particular field conditions. But research cannot end here. It must coordinate and integrate this improvement with the other operations of cotton production.

Thus, research on a project such as cotton mechanization is a long time process, perhaps a never-ending process, because the change in any one phase of any one operation of cotton production may call for a re-examination of all the other operations.

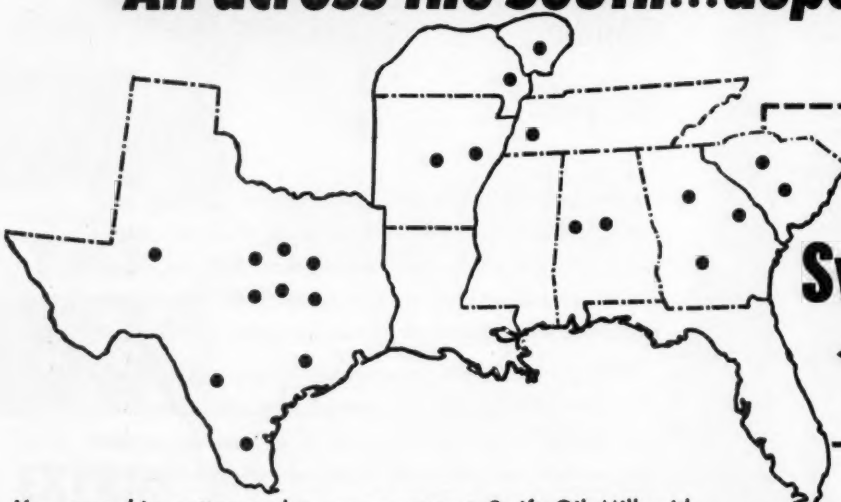
The effort to provide correlation and integration of the research from different locations is one of the basic reasons we are here today.

Land Preparation, Planting and Fertilization, by Rex F. Colwick, State College, Miss., Correlator, Regional Cotton Mechanization Project

I GREW up on a mechanized farm. Before the advent of the row crop tractor we had a four - wheel tractor with which we prepared our land. For planting and cultivation we had riding implements. They were modern at the time, they did a good job, and we didn't have to hire much hoe labor. A mechanical chopper and a bug catcher lay tried and discarded behind the granary, and a horse-drawn duster was under the shed. We were mechanized. Yet such a system could hardly be called mechanization today. To be as efficient as possible, mechanization has to be a changing thing as new methods and ideas are developed. Thus, I think we will always have "progress, needs, and problems" in mechanizing cotton production. There

(Continued on Page 40)

All across the South...depend on Swift



There's a Swift Oil Mill ← for you

You can ship cottonseed to your nearest Swift Oil Mill with complete confidence. You'll find Swift gives you efficient handling, quick unloading and prompt, courteous service every time.

Swift & Company

ALABAMA
Montgomery: W. F. Hays, Manager
Selma: C. A. Culver, Manager

ARKANSAS
Blytheville: J. E. Dicks, Manager
Little Rock: W. M. McAnally, Manager

GEORGIA
Albany: D. I. Driggers, Manager
Atlanta: G. O. King, Manager
Augusta: T. H. Whisnant, Manager

ILLINOIS
Cairo: W. B. Stone, Manager

MISSOURI
Portageville: C. A. Dacres, Manager

SOUTH CAROLINA
Columbia: L. Snowden, Manager
Greenwood: M. L. Claxton, Manager

TENNESSEE
Memphis: E. C. McGee, Manager

TEXAS
Coleman: J. B. Crosslin, Manager
Dallas: R. P. Tull, Manager
Terrell: J. W. Shepard, Jr., Manager
Fort Worth: W. C. Painter, Manager
Harlingen: D. Carroll, Manager
Rex Steele, Asst. Manager
Houston: W. W. Moore, Manager
Palestine: J. T. King, Manager
San Antonio: B. C. Reese, Manager
Waco: J. P. Holman, Manager

Cotton Handling

THAT SAVES YOU MONEY

The cost of operating cotton warehouses has gone up and up — and there has been an industry-wide shortage of experienced man-power. Despite these adverse factors, increases in service charges have been relatively small.

By mechanizing operations, by seeking and adopting more efficient methods and equipment to handle and store cotton — such as the power-driven "Clamp-lift" truck which industry-wide has saved countless thousands of cotton-handling manhours — your warehouseman has been able to offset serious labor shortages, and also hold his charges down.

Such efficiencies and savings are passed on to you — that's why America's cotton warehouse and marketing services are the most efficient in the world. Take advantage of them by patronizing the members of

NATIONAL
COTTON COMPRESS & COTTON WAREHOUSE ASSOCIATION
MEMPHIS, TENNESSEE

In Atlanta, Feb. 15-16

Southeast Exhibits, Meeting Planned

■ GEORGIA, Alabama - Florida and Carolinas associations join in sponsoring event for ginners.

Ginners of the Carolinas, Georgia, Alabama and Florida are cooperating in sponsoring the Southeast Gin Suppliers' Exhibit, to be held Feb. 15-16 at the Biltmore Hotel in Atlanta. Exhibitors will set up their displays Feb. 13-14 and will have Feb. 17 on which to remove them.

Plans for the exhibit were announced by Tom Murray, executive officer of the Georgia Cotton Ginners' Association and of the Alabama-Florida Cotton Ginners' Association, and Clifford H. Hardy, executive secretary of the Carolinas' Ginners' Association. The exhibit is sponsored jointly by the three ginners' associations.

Attractive exhibit space will be available for each exhibitor, Murray said; and detailed information may be obtained and reservations made at his office, Room 410, Henry Grady Building, Atlanta.

A large attendance of ginners is expected at the exhibit, Murray said, not only because of interest in the supplies on display but also because of the ginners' conventions to be held there on Feb. 15-16.

The Carolinas and Georgia associations have voted to meet in Atlanta on these dates, and the business and entertainment program will be arranged to provide maximum attendance in the exhibit hall as well as at the convention sessions.

Chattanooga Soybean Plant Work Well Under Way

Work is well under way on the new soybean processing and feed manufacturing plant which Central Soya Co. and McMillen Feed Mills are building at Chattanooga, Tenn. Since ground was broken in June, more than 400,000 yards of earth have been moved to prepare the 67-acre site for further construction; and other work has been done.

D. W. McMillen, Fort Wayne, Ind., founder of Central Soya, says that the decision to build at Chattanooga resulted largely from the "diversified Southern agriculture, large power resources and navigation facilities."

Soybean processing, feed manufacturing and grain storage will be the three basic functions of the new plant. A soybean solvent plant will convert beans into meal for use by the firm's feed division, McMillen Feed Mills, which will have a modern feed manufacturing plant at Chattanooga. There will also be grain storage capacity of three million bushels.

The site is at the junction of the Tennessee River and South Chickamauga Creek and is close to the new junction of Highways 27 and 41.

Blackstock New Manager Of ACCO at Lubbock

Jack B. Blackstock has been named district manager of Anderson, Clayton & Co., Lubbock, according to I. W. Briscoe, manager of the buying department, at ACCO's Houston offices. Blackstock succeeds Budley Raines, whose death was reported in the July 31 issue of The Press.

Blackstock has served for a year as assistant manager in Lubbock, and prior to that, he was ACCO buying representative at Plainview.

Delta Ginners Have Short Course at Greenville

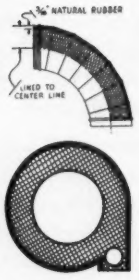
Cotton ginning problems were reviewed by ginning authorities Aug. 10 at the annual Delta Ginners' Short Course at Greenville, Miss. Oil mills of the area were hosts for a barbecue at noon.

Speakers on the program announced by George Baird, chairman, Delta Council ginning improvement committee, included Harris Barnes, Jr., Clarksdale, Miss.: Dr. M. K. Horne, National Cotton Council, Memphis; E. H. Brooks, vice-president, Continental Gin Co., Birmingham; C. A. Bennett and J. C. Oglesbee, Jr., both with USDA; and J. F. Barksdale, Mississippi State Rating Bureau, Jackson. Tom Johnston, Mississippi Extension ginning specialist, was moderator for a panel of representatives from the U.S. Ginning Laboratory at Stoneville.

From California to Georgia ginners are turning to rubber to save hours of downtime and dollars in lost production. The new Rockhide rubber lined elbows are fast becoming standard equipment in progressive gins from one end of the cotton belt to the other. In every cotton-growing section these rubber lined elbows are saving their price in replacement cost plus thousands of dollars by drastically reducing downtime. Rockhide Elbows are made in standard sizes of 20 gauge black iron. A quarter inch of tough, abrasion resistant rubber is fused to the heel half of the elbow and guaranteed never to come off. It starts in the bead in the intake end and extends smoothly over the crimp in the discharge end, giving full protection from one end to the other. Installation is the same as any galvanized elbow.

Don't Throw Away Your Old Fan Scrolls!

Old Fan Scrolls . . . even if they have holes in them . . . can be made better than new. When lined with rubber they will outlast a new scroll many times. Write for price lists today or contact your nearest jobber.



Special angles, transitions and dust collectors also available.

Call or write one of these jobbers for immediate delivery on Rockhide Conveyor Elbows.

- **The Murray Company of Texas, Inc., Contact our office nearest you at Dallas, Atlanta, Memphis, or Fresno**
- **Industrial Sheet Metal Company 2645 East Adams Street—Ph. BR 5-2340 Phoenix, Arizona**
- **Anderson Bigham Sheet Metal Works 424 Avenue L—Ph. 5-5281 Lubbock, Texas**
- **Duecker Bros. Belting & Supply Co. 4209-4211 Parry Ave., Dallas 10, Texas Phone TAylor 5183**

Abrasion & Corrosion Engineering Company

P. O. BOX 3568 • AMARILLO, TEXAS

To enable our customers to receive prompt shipment we have stocks of Southern Star Bagging at Augusta as usual and India Star Bagging both at Houston and Gulfport.

TWO EXCELLENT GRADES:

INDIA STAR

and

Southern Star

2 lb. Jute Bagging

You Can Rely on the Quality of Both Grades!

Contact ONE OF THESE REPRESENTATIVES FOR FAST EFFICIENT *Service*

SELLING AGENTS

BOLTON BAGGING CO.
1222 EXCHANGE BUILDING
MEMPHIS, TENN.

ROBERT BURGHER
4107 TURTLE CREEK BLVD.
DALLAS, TEXAS

SAM A. SANDERS
724 BOYLE BUILDING
LITTLE ROCK, ARK.

MASON JACKSON CO.
525 SPRING ST.
SHREVEPORT, LA.

Riverside Mills

AUGUSTA, GEORGIA

Two Memphis Conventions

Soybean Groups Set Meeting Plans

■ NATIONAL Processors and American Soybean Associations will discuss industry problems at meetings Aug. 30-Sept 2.

Representatives of all branches of the soybean industry will gather at Memphis Aug. 30-31 and Sept. 1-2 for the annual conventions of the National Soybean Processors' Association and the American Soybean Association. Both organizations will hold their sessions at the Peabody Hotel, and there will be a field trip on the final day to Clarkedale, Ark.

R. G. Houghtlin, Chicago, president, has announced that the National Soybean Processors Association business meeting on Aug. 30 will start at 10 a.m. and end at 5 p.m. This session is limited to regular and associate members of the organization. A cocktail party and dinner will follow the business session.

A meeting of the advisory board of the National Soybean Crop Improvement Council will be held concurrently with the business session.

Directors of the Association will meet for breakfast and a morning session on Aug. 31, and members are being urged to stay over for the American Soybean Association convention which formally opens that morning.

A full discussion of soybean producers' problems is scheduled at the convention of the American Soybean Association, according to George M. Strayer, Hudson, Iowa, secretary.

• Aug. 31—Among the speakers scheduled for the first day's meeting is Wm. Rhea Blake, National Cotton Council executive vice-president, Memphis, who will discuss the interdependence of the cotton and soybean industries. Others scheduled to speak are John C. Cowan, Northern Regional Research Laboratory, Peoria, Ill., discussing research work in soybean utilization by USDA; Paul C. Quintus, Foreign Agricultural Service, USDA, Washington, discussing the world fats and oils supplies.

James B. Schonberg, Uhlmann Grain Co., Chicago, discussing soybean and products futures markets; J. E. Thigpen, Commodity Stabilization Service, USDA, Washington, talking about orderly disposal of governmental edible oil supplies; S. F. Riepma, National Association of Margarine Manufacturers, Washington, discussing surplus butter disposal and its effect on soybean oil markets.

A. A. Clarkson, Port of New Orleans, New Orleans, talking about problems of handling soybeans in a port elevator; W. B. Fox, C. B. Fox & Co., New Orleans, discussing problems of exporting soybeans to world markets; and L. E. Kennedy, Kennedy's Grain Elevator, Newton, Ill., whose talk will be on buying soybeans on a cleaned basis.

• Sept. 1—Speakers and topics on Wednesday include Herbert W. Johnson, USDA, Beltsville, Md., expanded program of varietal development work in soybeans; W. E. Huge, Central Soya Co., Fort Wayne, Ind., problems facing the soybean processor; Marvin McClain, Commodity Stabilization Service, USDA, Washington, status of soybeans in 1955 agricultural programs.

George M. Strayer, secretary, American Soybean Association, American soybeans as viewed by European buyers; R. B. Oliver, Stuttgart, Ark., producing soybeans under irrigation; E. E. Hartwig, Delta Branch Experiment Station, Stoneville, Miss., new varieties for the Southern States; Francis Kutish, Iowa State College, Ames, what will we get for 1954 crop soybeans? The annual banquet will be held Wednesday night.

Cotton Cushion Campaign To Start in September

An intensive advertising campaign in behalf of cotton cushioning will open in September issues of consumer and trade magazines, R. T. St. John, Memphis, secretary of the National Cotton Batting Institute, has announced.

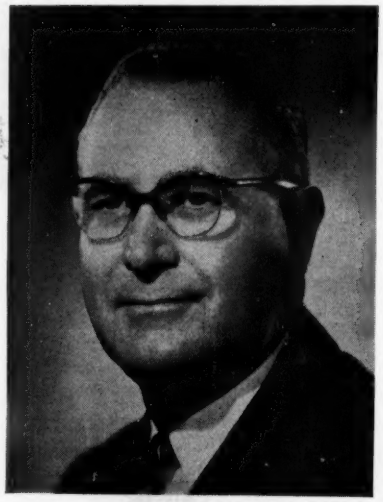
The advertising program is scheduled for fall issues of consumer and trade magazines this year. Plans call for the promotion to be continued and expanded during 1955.

A full-page advertisement will kick off the consumer campaign in the Sept. 18 issue of Saturday Evening Post. A two-color spread will open trade advertising the same month in Bedding Merchandizer. Similar ads will run in these publications in later fall issues, along with page advertisements scheduled in the October Better Homes & Gardens and November House Beautiful.

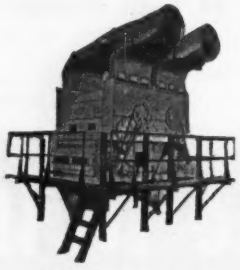
R. L. Massey, Progressive Independent Ginner, Now Has Moss Lint Cleaners in All Six of His Gins. He says:

"In 1952 I purchased my first machine for the Spur, Texas plant. In 1953 Moss machines were installed in my Pilot Point, Van Alstyne, and Seminole, Texas plants. In 1954 two more machines were purchased for my plants at Tioga and Crosbyton, Texas.

"The repeat purchases are evidence of my complete satisfaction with the fine work the Moss Lint Cleaner is doing."



R. L. MASSEY
Pilot Point, Texas



Moss Lint Cleaner

Write us for a descriptive bulletin on the Moss Lint Cleaner and a list of the users in your area.

MOSS-GORDIN *Lint Cleaner Co.*

3116 Main Street, Dallas, Texas
Third Street & Ave. O, Lubbock, Texas
Box 2663 (DeSoto Stn.), Memphis, Tennessee

• Machine Stripping Steps Outlined

CENTRAL TEXAS farmers can harvest better loads of cotton with stripper harvesters than by hand pulling, at a saving of at least $10 to $15 per bale, says C. B. Spencer, Dallas, chairman of the cotton production committee, Statewide Cotton Committee of Texas, and agricultural director, Texas Cottonseed Crushers' Association.

"But to make this saving," Spencer adds, "a farmer must do a good job of following the steps practiced by experienced cotton growers. These steps are:

"1. Plant a stormproof or semi-stormproof variety with maximum tolerance to angular leaf spot disease.

"2. Plant in uniform width, 40-inch rows.

"3. Secure a uniform and reasonably thick stand.

"4. Prevent insect damage, especially from boll weevil and bollworm that leave damaged bolls on the plants.

"5. Wait until the crop is fully mature (all bolls are open to the top) before using a defoliant or leaf killer and cover the plants thoroughly. Secure the 1954 Defoliation Guide from the county agent. When there is sufficient moisture for the plant to continue growth, it is best to add a material that will prevent regrowth.

"6. Wait until the leaves have dropped or until they are so dry they crumble. Harvest should never begin until the lint, bolls and leaves left on the plants have thoroughly dried.

"7. Set the stripper for maximum harvest efficiency, but so it will not strip bark off stalks.

"8. Use a blower and roomy trailer, distributing the load uniformly in the trailer without trampling.

"9. Cover loads with a tarpaulin to prevent waste between the farm and the gin, and to eliminate possible wetting while standing in the field or on the gin yard.

Bleachers Use More, But Linters Total Drops

Bleachers used 748,200 bales of linters during the first 11 months of the 1953-54 season, USDA reports, but other users took only 473,800 bales.

The total consumption of 1,222,100 bales for the August-June period this season compared with 1,255,400 in the comparable period of 1952-53. In the 11 months last season, bleachers consumed 716,300 bales of linters and other users took 539,100 bales.

USDA reports that linters exports through May this season totaled 195,000 bales, whereas only 100,000 bales were shipped abroad in the same 10 months of last season.

Imports by this country amounted to only 148,000 bales of linters for August-May this season, whereas 293,000 bales were imported in the comparable 1952-53 period.

Farm Owners Buy Early

More than half of the farm owners in the Arkansas coastal plain area acquired ownership by the time they were 25, a University of Arkansas survey indicates. The study showed that three-fourths of the owners had their farms by the age of 30 and 98 percent by the age of 40.

Oil Chemists' Meeting Plans Are Announced

Plans have been announced for the fall meeting of the American Oil Chemists' Society to be held this year Oct. 11-12-13 at Hotel Radisson, Minneapolis.

About 90 technical papers, 50 percent more than ever presented at a previous meeting of the Society, will be given, according to Raymond Paschke, Minneapolis, publicity chairman.

Two prizes will be awarded for outstanding papers, one selected from the four symposia which are scheduled, and one from the general papers.

■ **DALE W. McMILLEN, JR., has been elected president of Central Soya Co., Fort Wayne, Ind., succeeding FRED W. THOMAS who resigned.**

• Oilseed Processing Trends Analyzed

OILSEED PROCESSING TRENDS is the title of an article by George Kromer in USDA's publication, Marketing Activities, issued in June. The article summarizes findings of a 1952-53 survey by the Bureau of Census of soybean, cottonseed and flaxseed mills.

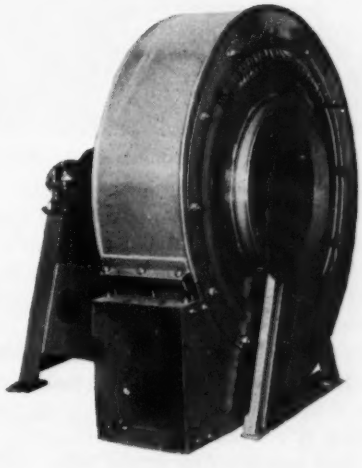
Data in the report include the quantity of various oilseeds processed by different methods; the number of mills using hydraulic, screw press and solvent extraction; and yields per ton of oilseed by various processes.

Since 1945, the article points out, the Bureau periodically has surveyed trends in oilseed processing; and the surveys have revealed continuing shifts in numbers of mills and in processing methods.

"The BOARDMAN SUPERBLAST Fan is the YARDSTICK OF QUALITY"

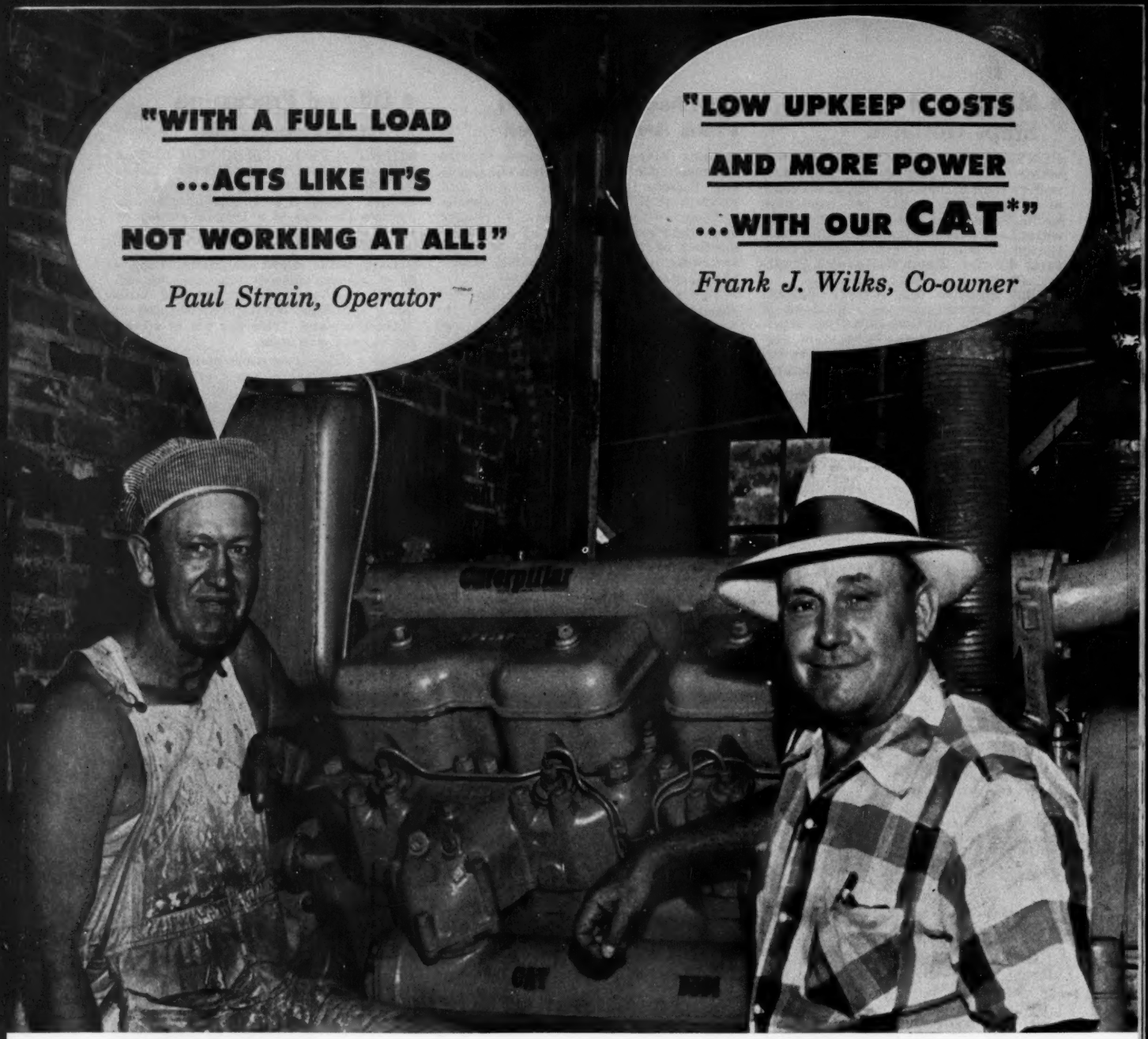
LONG-LASTING • VERSATILE • LIGHT ON POWER • EASY TO REPAIR

"Yes, sir—you can ask any ginner or oil miller with first-hand knowledge of the SUPERBLAST, and he'll tell you it's the finest centrifugal fan around! Boardman builds it to *last*, with thick, sturdy steel or cast-iron scroll and big, heavy-duty shaft and bearings. That smooth-running, well-balanced blast-wheel makes it easier on power than many lighter fans. One SUPERBLAST does lots of jobs, because the housing adjusts easily to 8 different positions. And when repairs are eventually needed, it's a snap, thanks to SUPERBLAST's sectional scroll and replaceable blast-wheel blades. For yard-wide quality, specify SUPERBLAST Fans, by Boardman!"



TAKE YOUR FAN INSTALLATION AND CAPACITY PROBLEMS TO . . .

THE BOARDMAN CO.
OKLAHOMA CITY, OKLAHOMA
1413 S. W. 11TH ST. PH. MElrose 8-5433



Since July, 1951, this Caterpillar D364 Cotton Gin Engine has powered the Caruthersville Custom Gin, Caruthersville, Mo. It drives a 3/90 Murray with all cleaning equipment, lint cleaners and seven 35″ to 45″ fans. Production averages between 2000 and 2500 bales per season.

Let's check on its performance from *two* viewpoints. Co-owner Frank J. Wilks says: "We're now pulling much more gin machinery than we did with our previous engine. Low upkeep cost with more power has been the outstanding advantage with our Cat." And operator Paul Strain adds: "With a full load, that baby just sits there and acts like it's not working at all!"

When owner and operator agree on an engine, that's a mighty good guide to *money-making* power. And that's what you can depend on from *all* sizes of Caterpillar Cotton Gin Engines. Honestly rated, their horsepower is all there at the clutch shaft, ready to deliver the steady, uniform saw speeds necessary for quality samples. A quick-acting governor adjusts instantly to the load. And an exclusive fuel system enables them to burn low-cost No. 2 furnace oil without fouling, even when idling for extended periods. There's a *3-way saving* for you—cheaper fuel, less of it and minimum maintenance!

Another big plus with Cat power—*fast* service at your gin day or night! Your Caterpillar Dealer has the skilled mechanics and stock of genuine parts to provide on-the-spot attention when needed. Everything about these rugged yellow cotton gin engines, available up to 500 HP, pays off in *more* work at *lower* cost. Ask your dealer to *show* you how one can pay off in your gin!

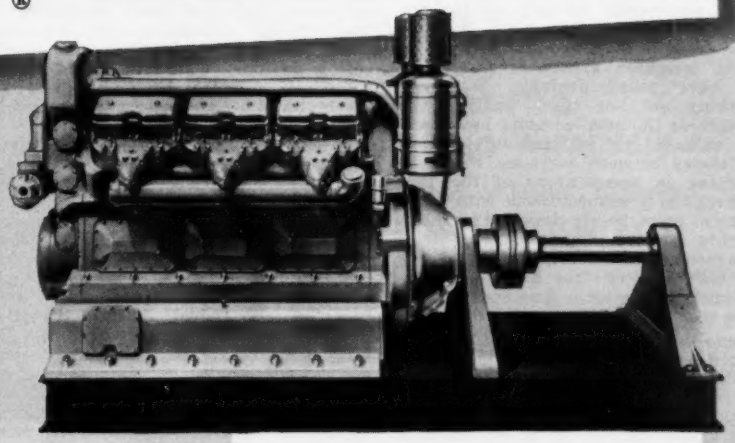
Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

USE CAT POWER FOR HIGH-GRADE SAMPLES

YOUR HEADQUARTERS FOR
Caterpillar® Cotton Gin Power



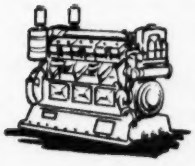
Experienced engine men, who are trained in analyzing the power needs of cotton gins, are at your service at your Caterpillar Dealer. We can quickly and accurately determine your requirements and give you an estimate on repowering with sure-starting, sure-running Cat Cotton Gin Engines. This service is without cost, so call us, today!

MONEY-SAVING SERVICE . . .

Skilled mechanics are ready to answer your call for service, day or night . . . specialized tools and know-how insure a minimum of downtime!

PARTS — IN STOCK . . .

No waiting for replacement parts — we have complete parts stocks for all models of Cat Gin Engines. They're the same precision quality as the ones they replace!



COMPLETE LINE OF GIN POWER . . .

Cat Gin Engines are available in 9 sizes up to 400 HP for continuous duty. A wide selection of mountings, clutches, cooling systems, starting systems and other attachments enable you to custom-tailor power to your preference!

ARKANSAS

J. A. Riggs Tractor Company
Little Rock — Fort Smith — McGhee — West Memphis — Camden —Jonesboro

ILLINOIS

John Fabick Tractor Co.
Salem — Marion

MISSISSIPPI

Stribling Bros. Machinery Co.
Jackson — Greenwood — Gulfport

MISSOURI

John Fabick Tractor Co.
St. Louis — Sikeston — Jefferson City

TEXAS

Central Texas Machinery Co.
Abilene — San Angelo — Odessa

Darr Equipment Co.
Dallas — Gladewater — Wichita Falls

Wm. K. Holt Machinery Co.
San Antonio — Corpus Christi — Austin

West Texas Equipment Co.
Amarillo — Lubbock

Conference Proceedings

(Continued from Page 32)

has been much progress in land preparation, planting, and fertilization but there are still problems and needs in each.

The first step in land preparation should be **field preparation**; that is, field layout, drainage and erosion control. Progress in the form of more versatile land levelers for the large crawler-type equipment as well as for the small farm tractor has made this job easier. Land levelers are almost a necessity in irrigated areas; in the Delta they have aided drainage work by smoothing out low spots; and in the hill sections the smaller units have been very valuable in maintaining smooth, even slopes between terraces. Problems remaining in many areas of the Belt are irregularly shaped fields with short and point rows, poorly designed terraces, unevenly spaced terraces, poor row arrangement, and poorly drained fields with low spots or "pot holes" that delay timely operations. Another problem is the cost of extensive earthmoving.

These problems point toward the need of increased research in drainage and erosion control to fit in with mechanized cotton production. The merits and practicability of parallel rows and terraces spaced uniformly in multiples of the width of two- or four-row equipment should be determined. With this there is a need for education emphasizing the importance of proper field layout, drainage and erosion control. This should tend to reduce to some extent the cost of extensive earthmoving by stimulating more custom operation of heavy equipment.

The development of power stalk shredders represents progress in crop residue disposal, but this has not completely solved the problems. There is still the problem of the remaining stubble which in many areas does not decompose, but remains to clog planting and weed control equipment. Root or stubble slicers developed in Texas do a good job—but only in small to medium size stubble. The cost and power requirements of most of the shredders are extremely high and their durability is low. Present shredders will kill only about half of the pink bollworms in rank cotton residue. Thus, in the "needs" column is a better method of stubble disposal and a cheaper, yet better shredder that requires less power. That is a big order, so we need more research to find possibly an entirely new principle of cutting or shredding, or perhaps even chemical disposal.

Much of the early research in agricultural engineering was in seedbed preparation. But much of it was done under "horse and mule" conditions. Thus the new findings, while they often tend to agree with the old, may be so much more significant, as they have been in Mississippi, that they call for a completely new study that may change all previous concepts. So it seems that our greatest need in seedbed preparation is expanded research—replicated in more areas with differing conditions and soil types.

One of the greatest items of progress in planting is the establishment of optimum stands to facilitate mechanization. Only the research of the past six or seven years has tried to determine an optimum stand for yield **and** mechanization. In the past when yield was the only concern, researchers' closest spacing was about six inches between plants in drilled cotton—perhaps because a standard hoe did not come any narrower. Findings of the past several years have shown that cotton can be drilled or hill-dropped to a stand and left much thicker than any previous recommendations permitted, without reducing the yield. Results vary, but the optimum range is between 25,000 and 55,000 instead of between 10,000 and 25,000 plants per acre. These higher populations can usually be obtained without thinning, either by drilling or hill-dropping, and they tend to shade out weeds and produce a plant more suitable for mechanical harvesting.

One of the greatest problems is predicting percent emergence. To give the desired rate of planting, planters still must be calibrated by the slow method of trial and error. Metering mechanisms do not deliver a constantly uniform rate of seed to the furrow. This fault is probably as much in the feed tubes and furrow opening devices as it is in the planter hopper. The problem is not great in hill-dropping, but in drilling there is usually uneven distribution of the seed both longitudinally and transversely.

To solve these problems there is a need for such things as more basic research on factors influencing emergence and survival of stands of cotton. There is also a need for planters in which predetermined rates can be set easily and which will meter out seed uniformly and then place them in the ground uniformly. This need calls for more research on seed tubes and furrow openers. Another need is a standardized row spacing of 40 inches for cotton. This width is most suitable to present machinery,

National Fats and Oils Brokers' Association, Inc.

GEORGE K. DAHLIN, *President*

Information and services supplied by members of the NATIONAL FATS AND OILS BROKERS' ASSOCIATION are as fast as can be obtained, and are most reliable.

Your support of the brokers who are members of this Association is a sure way to get quick and satisfactory action.

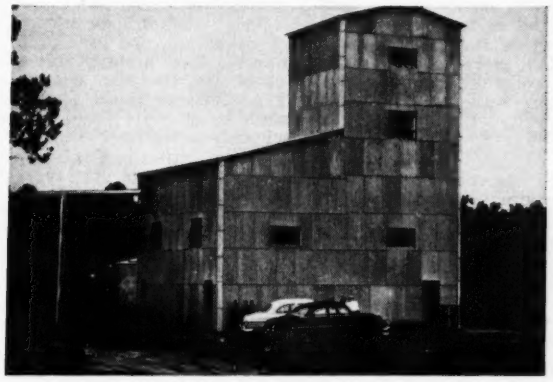
There are no brokers anywhere superior to those who belong to this Association for carrying out your buying and selling orders. These firms work hard to earn the brokerage that is paid them.

A broker of integrity and upon whom you can depend is an excellent insurance policy — he is of value to you from many standpoints.

IS YOUR BROKER AN ASSOCIATION MEMBER?

Engineered and placed in operation by Lukenweld...

NEW FILTRATION-EXTRACTION PLANT BOOSTS OPERATING PROFIT $750 A DAY



In 30 days of continuous specification performance of its new Lukenweld filtration-extraction plant at Greenwood, Mississippi, Mississippi Cottonseed Products Company reports an increase in operating profit of more than $750 a day over previous hydraulic pressing. In the first 13,300 tons of Delta seed processed since plant start-up, profit increases are reported to have averaged over $500 a day. The plant is based on pilot plant studies of the Southern Regional Research Laboratory of the U. S. Department of Agriculture.

Improved oil and meal quality—Commercial acceptance of the Lukenweld plant by Mississippi Cottonseed Products Company is for the processing of both cottonseed and soybeans. The plant is the first to solvent-extract directly with qualities in both oil and meal which are superior to hydraulic products. As shown in the certified analyses at right, gossypol is reduced and there is less residual oil in the meal.

Simple and economical to operate—One operator and a helper per shift operate the plant. Seed preparation equipment is the same as that used in hydraulic mills, operation of which is familiar to supervisory personnel.

Within the budget of the smaller processor—For the first time, solvent extraction is brought within the means of oil mill operators crushing less than 25,000 tons a year.

The experience and design skills which produced this first successful direct filtration-extraction plant are available to you. If you are interested in increasing your profit and strengthening your competitive position, we welcome the opportunity of discussing the advantages of Lukenweld solvent extraction with you. For information, contact Process Engineering Department, Lukenweld Division, 686 Lukens Building, Coatesville, Pa.

CERTIFIED OPERATING ANALYSIS

First 13,353 tons of Delta Cottonseed
1/1/54 to 5/15/54

	AVERAGE	MAXIMUM	MINIMUM
Moisture %	8.69	10.8	7.4
Free Fatty Acid %	0.52	2.9	0.4
Oil Content %	18.85	19.7	17.7
Oil Content #/T	369	386	347
COTTONSEED MEAL			
Moisture %	9.69	12.95	8.86
Residual Oil %	1.47*	3.12	0.58
Gossypol %	0.05	0.08	0.04
Protein Sol. %	57.52	62.04	55.82
*Average since 5/4/54	0.86		
COTTONSEED OIL			
Free Fatty Acid %	0.87	1.0	0.8
Refining Loss %	5.2	6.9	4.4
Red Color	5.0	5.8	4.7
Bleach Color	1.56	1.8	1.5
Gossypol %	0.053	0.08	0.04
31 TANK CARS SHIPPED			
Free Fatty Acid %	0.86	0.9	0.7
Refining Loss %	5.5	7.6	4.5
Red Color	5.2	5.7	4.7
Bleach Color	1.56	1.7	1.5
Closed Cup Flash +300°			
Moisture & Volatile 0.14			

UTILITIES FOR PREPARATION & EXTRACTION

Steam—4400 #/hr	700 #/T
Water—244 gpm.	2300 gal/T 71° F.
Electricity—136 Kw	21.6 Kw/T
Solvent Loss—0.62%	1.45 gal/T

LUKENWELD
DIVISION OF LUKENS STEEL COMPANY
LUKENS

and a standardization of such in planters would simplify the manufacture and adjustment of all cotton mechanization machinery.

Fertilizer application machinery is difficult to discuss because of the great variation in requirements across the Belt. Certainly there has been progress, especially in areas where the use of anhydrous ammonia is feasible. There are now several suitable anhydrous ammonia rigs on the market; and research is continually producing innovations such as Mississippi's experimental machine for simultaneous four-row application and bedding. The commercially-available granular fertilizer applicators which work in conjunction with planters and cultivators also represent progress.

Of course there are always problems and needs. The availability and storage of anhydrous ammonia is a problem in many areas, especially to small users. Most of the machines presently available for anhydrous ammonia application entail an extra trip through the field in addition to seedbed preparation operations. Granular fertilizer is difficult to place near the seed in planting without disturbing the soil under the seed.

Aqueous ammonia is more plentiful than anhydrous ammonia in some areas and it is easier to store, so there is a need for a simple and accurate machine for applying it. Such a machine is being developed experimentally in North Carolina and South Carolina. For applying granular fertilizer there is a need for a standardized applicator opener that gives less seedbed disturbance.

Chemical Weed Control, by Harold T. Barr, Baton Rouge, Head, Agricultural Engineering Research, Louisiana State University

IN 1948 quite a few commercial companies were doing some research in an effort to get a chemical that could be used more effectively on weeds and grasses and not harm the cotton plants. That same year, in Louisiana, researchers screened a large number of experimental chemicals. Results indicated that the combination of proper seedbed preparation, pre-emergence application of dinitro chemicals as used in their test, and/or rotary hoe attachments and flame cultivators, eliminated the necessity of all hand hoe labor in the production of cotton. They found there was little difference in the effectiveness of pre-emergence chemicals when applied as a blanket spray or as a 16-inch drill row band, or whether applied as 6 or 100 gallons of spray per acre.

Several workers discovered about this time that the smoothness and firmness of the land to which chemicals are applied have a greater bearing on effective weed control with pre-emergence sprays than was formerly suspected. Some of the best results were obtained on plots that were firmed with an ordinary farm cultipacker after planting but before spraying. Ground temperatures, too, seemed to play an important role, not only in the effect on the chemicals' weed killing ability, but also on the probability of injury to the young cotton plants.

Post - emergence sprays gave some promising results but tests show the need for exercising great care in their application so as not to cause excessive crop injury. Unfortunately, most chemicals that give grass and weed control will also injure cotton if they contact the leaves.

The Man Said It, But It's Hard To Believe

■ **THIS STORY comes from West Texas, where it's often easier to strike oil than water and drouths are not unheard of —which makes the story news that's hard to believe. Folks in Snyder are not using enough water, the city manager has complained. "There is plenty of water available," he said, "and our water production facilities could be operated more economically if we could get the people to use more water."**

A great deal of work was carried out during 1948-52 by commercial companies in placing on the market spray units especially adapted to herbicides in cotton. New designs in pumps, booms and nozzles for handling chemical sprays were appearing overnight.

Early in the 1952 season several factors combined in sections of Arkansas, Mississippi and Louisiana to produce a mass hysteria which blamed stand failures on the use of chemicals. Thousands of acres were plowed up unnecessarily. The suspected heavy loss in stand counts from chemicals was not substantiated by a survey of 631,000 acres in Louisiana. The acreage plowed and replanted where no chemical was applied was 20.7 percent and when pre-emergence spray was applied the acreage plowed and replanted was 20.2 percent. Cold rains, a light frost, and some chemical damage from too heavy application, resulted in general belief that it was necessary to plow up and replant. Parts of fields that were left produced the best cotton crops in many cases.

Two- and four-row tractor units were appearing in the different states in 1952 and 1953 that would level the beds, plant the seed, firm the soil and spray the pre-emergence chemical in one operation. Of necessity these units operated at speeds slower than the operators had been using for planting. This was actually an advantage, as it enabled the operator to get a straighter row, bunched the seed better for hill-dropping, and helped keep all units operating as set.

To get a better firmed seedbed, a series of steel rollers, rubber covered rollers and slides were tested with regular planting equipment in conjunction with pre-emergence applications in Louisiana, Mississippi and Texas. Rubber covered, flexible-center rollers, 16 inches in diameter and 12 inches wide, were particularly good in pre-emergence work in Mississippi and promoted the quickest and most complete emergence in Texas.

Texas developed an improved mounting for pre-emergence press-wheel-rollers and spray nozzles. Mississippi and Louisiana, working independently at the same time, developed a shielded sweep arrangement so that the cultivating and penetrating advantages of the regular low crown sweep could be utilized without soil being thrown on the treated drill row. At the same time a smooth shoulder was maintained, and with a nozzle bracket on the rear of the shield, the post-emergence spray was applied at the correct place in relation to drill row and cotton plants. A large number of plans for the shields were distributed by both states and several companies placed their own adaptations of these designs on the market.

Liquid formulations have been produced for several of the more promising wettable powder formulations. They have proved equally as effective as dry formulations and are easier to handle. Thus one of the troubles of the sprayer manufacturers has been removed.

Equipment for applying both pre- and post - emergence chemicals is readily available today and will do a good job if set up, calibrated, and used properly. We still do not have a spray unit which is fool-proof for the man who insists on using pond water or the tomato can that looks like a quart for measuring his chemicals.

Hoe labor for cotton in the Louisiana-Mississippi Delta area is averaging about $20 per acre this year. One-quarter acre test plots at St. Joseph, La., last year with DN, CIPC and WK "M" all gave good weed control. The lowest total cost for weed control of the three chemicals at the recommended rate was for DN at six pounds. This was $9.40 per acre for the pre-emergence application followed by hoeing and flaming; $9.82 per acre for the same pre-emergence chemical, plus post-emergence application at the same rate.

The best yield in this test, 3,671 pounds of seed cotton per acre, was given by DN at nine pounds, and in practically every case the additional yield obtained by using chemicals in both pre- and post-emergence sprays more than offset the cost of the chemical.

When used at recommended rates, WK "M" at three pounds, followed by WK "M" at three pounds, gave the best yield of the three — 3,640 pounds of seed cotton per acre. There was no significant difference between the DN and CIPC at their recommended rates. At effective but not detrimental rates, the three methods of control used ranked as follows:

1. Chemical as pre-emergence treatment followed by same chemical as post-emergence treatment.
2. Chemical as pre-emergence treatment followed by herbicidal oil as post-emergence treatment.
3. Chemical as pre-emergence treatment alone.

All three methods were hoed and flamed as needed and gave increased yield over the check which was hoed and flamed also.

The cost of chemicals is still considered to be too high, as many farmers are not willing to risk $8 to $12 per acre, and not know whether a crop will be made or not. The ultimate goal for a chemical is one that: (1) will control all weeds and grasses in cotton without injury to the cotton; (2) will have such properties that the following crop will not be harmed; (3) will not injure adjacent crops; (4) will have such properties that it can be washed or cleaned from equipment; (5) will not be overly corrosive or require special materials for making tanks. pumps, nozzles or other pieces of equipment.

Assuming the chemical manufacturers can meet all of the above specifications, I believe it is time for the manufacturers of pumps to make one that will operate for more than one season, cover 100 acres without either ruining a bearing, wearing out either the case

or impeller, rupturing a diaphragm, breaking the seal or sticking a valve. There are some good pumps on the market, but there are a large number that will not come up to the above performance. Relief valves continue to be a source of trouble. One piece of research was recently called to my attention where new nozzles were being tested under controlled conditions, and over half the nozzles had to be discarded as they could not be adjusted to give the spray pattern which was specified by the manufacturer. If they cannot be adjusted under controlled conditions, how can we expect the farmer to get the desired results in the field?

Mechanical Weed Control, by Fred C. Elliott, College Station, Cotton Work Specialist, Texas Extension Service

A WIDE CHOICE of methods is available to cotton farmers today to help meet the age old problem of grass and weed control in cotton by means other than hand hoeing. Much progress has been made. There are still needs and problems in weed control. But those of us in educational work feel that the roughest part of the road is behind us and that the sharp turns have been rounded out and made into graded curves. The road ahead will be smoother.

This paper is intended as a kind of "inventory" of where we now stand in weed control in all areas of the Cotton Belt. In assembling material for it, I contacted research and extension workers in each Cotton State. These folks sent me some very useful and interesting information which I will review:

• **Alabama**—There is very little cross-plowing done in this state. The topography doesn't lend itself to this practice; however, several larger farm operators in the central part of the state around Montgomery and the Tennessee Valley are practicing cross-plowing.

Six or eight years ago there was a "flurry" of flame cultivators, particularly around Montgomery. At present very few flame cultivators are in use.

A number of growers follow the practice of hill-dropping. It is estimated the percentage is less than 10 percent. There are a few mechanical choppers in the state. The number has increased the last few years. The greatest progress in mechanical weed control has been in the use of the rotary hoe, and it is the most widely used mechanical practice. This tool also aids in getting a stand after a crust formation.

• **Georgia and South Carolina**—As in many other states, one of the most difficult problems when the crop is mechanically picked is the grass and weed growth after the crop is laid by. When the cotton is laid by in dry weather and grass and weed seed have lain dormant, subsequent moisture causes seed germination resulting in fields that are in a very unsatisfactory condition for mechanical harvesting.

A large number of various kinds of flame cultivators were purchased by farmers when the machine was first introduced. Later their use was abandoned. Currently, interest indicates this equipment has a definite place.

Again, the rotary hoe was reported as one of the most valuable tools.

• **North Carolina** — Flaming has been used to a limited extent chiefly because of the high price of L.P. gas. Rotary hoes are being used extensively in cotton; the trend seems to be toward the broadcast type rather than the attachment type. Possibly 25 percent of the cotton acreage is now being treated with some type of rotary hoe. The extension agricultural engineer is encouraging the floating-type rotary hoe attachment. However, only three manufacturers produce this type of hoe.

Cross-plowing is not practiced, largely because of the topography. Hill-dropping has expanded and about 15 to 20 percent of the crop is so planted. Crusting has caused many farmers to prefer a solid drill. Another limitation is planting equipment; none of that which is now available seems to be entirely satisfactory at desired tractor speeds.

• **Arkansas**—Use of the rotary hoe in cross-plowing is gaining favor in certain sections of Arkansas. However, cross-plowing has the disadvantage of reducing yields on soils of low fertility and decreases picker efficiency slightly.

The big problem with hill-dropping is the lack of a high speed hill-drop planter. This fact also contributes to the slow acceptance of pre-emergence chemicals.

A number of farmers are doing a good job with rotary hoes followed by cross-plowing and flame cultivation, with a light hoeing in the summer. Others are using pre- and post-emergence chemicals followed by flaming and a light hoeing.

• **Louisiana**—Farmers started with the flame method of cultivation about 10 or

The New, Trouble-Free

ZEIG UNIVERSAL

TRAVELLING TELESCOPE

"The Travelling Telescope That Will Travel"

FIVE YEARS OF PROVEN, TROUBLE-FREE SERVICE!

Here are some of the reasons it has given such outstanding performance:

- No Slip Joint to Bind
- Rolls on Angle Iron Track
- Made to Order for Your Gin
- Roller of 2 inch Pipe — Sealed Ball Bearings
- Travels Full Length with Light Pressure of Finger or Hand

Also, Complete Line of Gin, Oil Mill and Feed Mill Sheet Metal Products.
The Home of the Famous and Talked-about 18 Gauge Elbows.

Write for Illustrated Bulletin

ZEIG SHEET METAL WORKS

P. O. Box 673 HEARNE, TEXAS Phone 504

12 years ago. A few have continued. The growers who are using chemical weed control are following with flame. By using the rotary hoe ahead of plowing, growers reduced the weed population 50 percent in 1948.

One Louisiana grower in 1953 replanted 240 acres in June, repeated the use of chemicals, and harvested 303 bales in spite of an early frost which reduced production 80 bales. He cultivated and harvested this crop with four men.

• **Mississippi** — Mississippi introduced the cultivator mounted rotary hoe for early cotton culture. This was followed, when the cotton reached a height of six to eight inches, by flame cultivation. Although flame cultivation lost much of its popularity in 1948 and 1949, the development of a new flat-type burner by Mississippi in 1950 began to bring it back, and it has spread to the West.

Cross-plowing is successful. Hill-dropping is combined with chemical weed control. The rotary hoe is widely used.

• **Missouri**—The rotary hoe for cotton, corn and soybeans is a very commonly used tool. Hill-dropping is practiced on most of the area receiving chemical treatment, but very little otherwise. Flaming is being used very little at present due, probably, to some bad experiences early in the flaming period.

• **Oklahoma**—Aside from regular cultivating equipment, the rotary hoe is being used more widely than any other weed control practice, particularly in Western Oklahoma where most of the state's cotton is grown. County agents report that the rotary hoe is being used one or more times on 70 to 75 percent of the state's cotton acreage. Number of rotary hoes on farms has jumped from 1,300 in 1950 to around 17,000 in 1953. The effective use of the rotary hoe has reduced hand hoeing in cotton by 65 percent. In Eastern Oklahoma where fields are smaller and irregular, with a greater weed control problem, the rotary hoe is not being used as widely as it is in the western part.

Few farmers are using flaming and cross-plowing. Research at Chickasha has shown there is no advantage of hill-dropping over drilling under conditions there.

• **Texas**—Weed control problems vary widely.

The rotary hoe is the most widely used mechanical implement and permits economical high speed operation. County agents report there were 26,804 tractors equipped with rotary hoes in 1953, compared with only 6,966 in 1949.

The rotary hoe tractor attachment has cut the hoe bill 65 percent. Its timely use has given up to 100 percent control, and frequently the subsequent hand hoeing is a fast "walk over" operation. The rotary hoe is also a valuable crust breaker when used as a pre-emergence tool.

Chemical grass and weed control is being combined with mechanical control. Acreage receiving pre-emergence treatment rose from 7,754 in 1952 to 11,036 in 1953; post-emergence oiling expanded from 2,303 to 7,410 acres.

In 1947 there were 64 flame cultivators operated in 24 counties. This dropped to 31 flame cultivators in 18 counties in 1948. The flame cultivator continued to decrease in popularity with the increase of the rotary hoe. However, with the introduction of the new flat-type burner, flaming is again attracting attention in the western irrigated areas of the state, in the Lower Rio Grande Valley and along the Gulf Coast.

Cross-plowing is on the decrease because a solid drill is preferred for machine harvesting, especially where the stripper is used. More interest is being shown in cross-plowing in the northeastern part of the state at present. This device for a two-row tractor consists of five 15-inch sweeps set on 20-inch centers, and arranged so that the path across the beds is plowed in front of each wheel to cut down on the bouncing action. Cross-plowing has reduced hand hoeing as much as 62 percent. The tractor can operate in second gear at full throttle.

Hill-dropping is on the decrease in Texas because a stripper does a more efficient job in an evenly drilled stand.

The spot-oiling of Johnson grass is currently attracting wide attention.

• **Arizona**—Flaming is definitely on the increase in Arizona. It is reliably estimated that there will be over 100 flame cultivators in 1954 compared to one or two in 1953.

The moisture conserving practice of "capping" or hilling soil over the planted drill and subsequently raking it off prior to emergence makes the use of pre-emergence chemicals impractical.

The rotary hoe has been used very little. Hill-dropping and cross-plowing are not practical in Arizona.

• **California**—There are approximately 100 flame cultivators with the new flat-type burners of mostly the four-row type on cotton farms in California at the present time. Most of these are recent machines supplied by dealers since 1950. The majority of the growers using these machines are well satisfied.

Rotary hoe attachments for cultivators are not common. A small diameter rotary hoe is used for crust breaking more than for weed control.

Cross-plowing is not practiced in California. There is very little, if any, hill-dropping, but there is considerable planting to a stand by drilling thin. Rates of 9 to 15 pounds of acid delinted seed are used by some growers with no thinning during the season. There is a considerable amount of planting thick and chopping with mechanical choppers. The mechanical chopper, of course, gives some mechanical weed control benefits. The great majority of cotton is still drilled thick and either hand hoed or mechanically thinned. Drilling thin to a stand in well prepared seedbeds and with more precision planting equipment is increasing yearly. Most of the planting to a stand is done on the lighter soils.

Probably the most common mechanical method of weed control is heavy dirting. That is, the cotton is planted so that it is actually down in a small furrow similar to the lister planting on the High Plains of Texas. In this manner a considerable amount of early grasses and weeds can be covered up with dirt, provided the season is such that the cotton grows up rather fast and is ahead of the grass and weeds.

• **New Mexico**—There is increased interest in flaming; and approximately 15 percent of the farmers are using this practice. With the present price of L.P. gas, the cost of flaming per acre amounts to approximately 43 cents with two-row equipment. The experiments have shown that flaming does not reduce yield. The cost for flaming the entire season is less than the cost of one hoeing. If all the farmers in New Mexico used this practice of flaming, they could save about $4.5 million yearly.

Rotary hoes are standard equipment on practically all of New Mexico's cotton farms. Their main use is for breaking the crust to allow the cotton seedling to come through. Hill-dropping is practiced to some extent, but there is no cross-plowing.

To date, none of the chemicals have proven satisfactory in New Mexico.

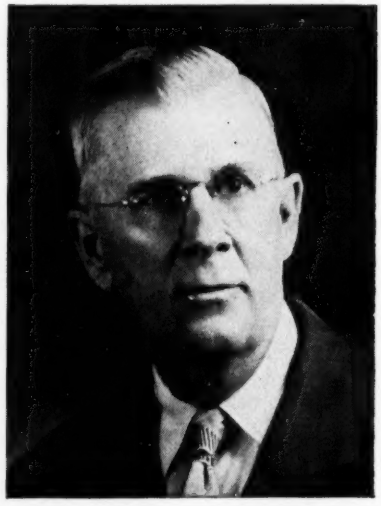
Insect and Disease Control, by H. G. Johnston, Memphis, Production and Marketing Division, National Cotton Council

MECHANIZED COTTON production has required a greatly increased investment per farm unit. To be economically

Presenting

Jas. R. Gill

Paris, Texas



JAS. R. GILL, Paris, Texas, who is a past president of the National Cottonseed Products Association and the Texas Cottonseed Crushers' Association and who has served as director and committee member in both organizations, is president and general manager of the Southland Cotton Oil Co. He was born in Leonard, Texas.

He was graduated from Draughon's Business College, Fort Smith, Ark., and worked for the Frisco Railroad there until 1911 when the line transferred him to Paris. The Southland Co. named Gill traffic manager in 1917, and in 1919 he became cake and meal sales manager. He transferred to Waxahachie, Texas, in 1933 as mill manager and returned to Paris as company vice-president and general manager in 1950. Two years later Gill was named president of Southland.

He is a member of the First Baptist Church and the Masonic fraternities, including York and Scottish Rite bodies and the Shrine. He is a Rotarian and served as president of the Waxahachie Rotary Club in 1938-39. He was participated in such civic activities as chamber of commerce work and is a member of the Dallas Country and Paris Golf Clubs.

successful, it demands more efficient farm management to insure high, stable yields, lower costs, and greater net income.

Disease and insect control helps insure the maximum potential yields that the soil is capable of producing, and helps preserve the quality inherent in the variety of cotton planted.

Disease control over the years has been difficult, but significant progress has been made. In fact, more progress has been made than is being fully utilized. For instance, effective seed treatments for seed-borne diseases and damping off of seedlings have been available for many years. But still no more than two-thirds of the planting seed are properly treated each year, and seedling diseases still hold top rank among cotton disease losses. Getting that remaining one-third of the planting seed treated is a definite need in disease control.

However, during cool, damp weather when germination and seedling growth are retarded, seed treatment alone is not always adequate against soreshin or seedling blight. Research indicates that certain fungicides, sprayed or dusted into the furrow at planting time, may further reduce losses from seedling diseases by destroying fungi in the soil surrounding the young plants. These treatments can be applied easily with simple, inexpensive equipment that is readily adapted to any tractor mounted cotton planter. Preliminary indications from these tests are encouraging.

Plant breeders have made considerable progress in recent years in the development of new varieties that are resistant to certain diseases, particularly Fusarium wilt. Intensive breeding programs are under way to develop varieties that are resistant to Verticillium wilt and bacterial blight. Recent advances in genetics, utilizing wild species of cotton, may open new possibilities.

Root knot nematodes are serious pests wherever cotton is grown on sandy soils. Nematodes not only cause damage directly to the roots, but also allow the entrance of other disease producing organisms, particularly Fusarium wilt. A recent development in the control of this pest is soil fumigation. Although the cost of this treatment is rather high, increased yields are frequently sufficient to make this operation profitable.

Boll rots are often severe in areas where cotton makes a rank growth and excessive moisture is present late in the season. Losses are due not only to a reduction in yield, but also in cotton quality. In recent years, defoliation as soon as cotton is mature has reduced this damage materially. Under some conditions bottom defoliation has been used to advantage even before the cotton is fully mature. This practice consists of applying a spray defoliant to the lower portion of the plant as soon as the bottom bolls are mature without injuring the leaves and immature bolls on the upper part of the plant. In this way, boll rots have been reduced to a minimum.

Chemicals will become increasingly important in the control of cotton diseases. Systemic fungicides, now in the developmental stage, are capable of being absorbed into the plant through the roots or foliage, and can prevent disease damage for a considerable period of time. The list of such chemicals is already impressive and, no doubt, others will be developed in the future.

For many years cotton insects have been considered mainly as a limiting factor in attaining maximum yields. But there are other important factors that should not be overlooked.

For example, cotton breeders have been striving for many years to develop earlier fruiting and earlier maturing varieties of cotton. Such varieties have many advantages, including more effective and more economical insect control during the late season. Cotton growers lose many, if not all, of these advantages, however, when an uncontrolled thrips infestation in the seedling stage delays fruiting and maturity for two weeks or more. Even though a damaged plant may eventually recover and produce as much cotton as a normal plant, there may be a complete lack of uniformity in growth, plant type, fruiting and maturity. This lack of uniformity can cause serious trouble in chemical defoliation and mechanical harvesting. When the normal or uninjured plants reach maturity and are ready for most effective defoliation, the damaged plants are in various stages of immaturity. The immature plants will not defoliate properly, and yield, fiber and seed quality may be reduced due to an excessive number of immature bolls.

An ideal plant type for most efficient mechanical harvesting is a comparatively short, upright plant with short, well-developed lateral branches and a mature boll on every fruiting node. Even with optimum growing conditions during the spring, such development is not possible if damaging infestations of fleahoppers, boll weevils, or bollworms are allowed to develop. When an excessive number of squares or bolls are destroyed, rapid vegetative growth results in abnormally large plants, uneven distribution of the boll load and often severe lodging. Fortunately, the cotton plant has a remarkable ability to compensate for lost squares and bolls if growing conditions are favorable later in the season—but only at an increased cost for insect control to protect the late maturing crop over a prolonged growing season. And the advantages that might have been gained through more efficient defoliation and mechanical harvesting are lost.

Tremendous progress has been made during recent years in developing more effective control for insect pests. Although the development of many new and more effective chemicals has been largely responsible for this progress, mechanization has played an important part. Farmers now have equipment for applying insecticides more thoroughly and with more timeliness than before.

Although cotton stalk destruction is a post-harvest operation, the many benefits to be gained from it affect only the next year's crop, and here it will be considered as a pre-harvest practice. Actually, it is the beginning of preparation for the next season and is an important factor in seedbed preparation for precision planting, chemical weed control, insect and disease control and mechanical harvesting.

It has been known for many years that early harvest and early destruction of cotton stalks are highly effective in reducing the number of boll weevils that survive the winter to attack the next season's crop. The pink bollworm, now a major threat to the entire Cotton Belt, is even more vulnerable to this practice.

Complete destruction of crop residue is facilitated by power driven stalk shredders which reduce the stalks to small pieces that may be readily plowed under. Research has clearly shown that the earlier the stalks are destroyed and the crop debris plowed under, the fewer boll weevils and pink bollworms will survive the winter.

Defoliation is another practice that has a bearing on insect control. Complete defoliation that prevents regrowth will deprive adult weevils of a food supply and prevent late season population build-up. In general, those weevils that emerge late in the season are most successful in surviving the winter. If the food supply could be eliminated 30 days before frost, many of the adult weevils would starve and others would be in poor condition for winter survival.

Obviously, then, insect and disease con-

TWO COTTONS That Have Kept Pace With Mechanization

D&PL-FOX

Fast Fruiting • Early Maturing Heavy Yielding • Excellent for Machine Harvesting • Moderately-High Lint Percent (34% to 38%) 1⅛ to 1½ Inch Staple • Good to Very Good Yarn Appearance • Good Spinning Qualities.

THE BELT'S BEST COTTONS

DELTAPINE 15

Medium Early Maturing • Heavy Yielding • High Lint Percent (38% to 40%) • Easy Picking — Hand or Machine • 1¼ to 1⅛ inch Staple • Good to Very Good Yarn Appearance • Good Spinning Qualities.

For Name of Your Distributor Contact:

DELTA & PINE LAND COMPANY

Sales Department • Scott, Mississippi

trol cannot be evaluated entirely on the basis of increased yields per acre. They must be considered from the standpoint of total benefits to the complete production program.

Panel Discussion:

Cotton Irrigation In Rain Belt

■ *Joe C. Hardin, Grady, President, Arkansas Farm Bureau Federation, panel leader*

YOU MAY well ask why irrigation has been given such a prominent place on tne program of a mechanization conference. I believe there's a good answer to that question. Most of us are aware of the large investment involved in current farming operations, and we know that mechanization represents a big part of that investment. We know also how vulnerable that investment is to adversity. So it is only good business to try to protect that investment by reducing the chance of adversity. Failure to do so retards mechanization progress; to do so speeds it up.

Supplemental irrigation is a means of protecting investment by reducing or eliminating the hazard of drouth. In other words, it is a means of obtaining high and stable yields year after year—the kind of yields so essential to mechanization progress. As an example of what irrigation in the Rain Belt could do to yields, only last year—which I readily admit was a dry one in this area—research results in the neighboring state of Missouri showed that the yield from irrigated cotton was more than 2,000 pounds of seed cotton per acre higher than for non-irrigated cotton. With results of this kind, and with the great potential which irrigation holds for stabilizing yields at a high level, I think the Conference Steering Committee is to be commended for giving irrigation a prominent place on the Mechanization Conference program.

Weather Facts, by Albert L. King, Memphis, In Charge, U.S. Weather Bureau Office

I WANT to give you some "facts" about the adequacy—or inadequacy—of rainfall as it relates to the production of cotton. Briefly, I hope to show that some widespread beliefs regarding rainfall in the Midsouth are not based on fact, and to indicate the frequency of drouths of various lengths.

To do this, I must give you the background on two factors: (1) the source of the weather data, and (2) the definition of a "drouth" as used in this study and as it relates to cotton.

The source is detailed rainfall data at the city office of the Weather Bureau in Memphis, where we have a continuous record for a period of 82 years. By using data obtained at **one** location, we have conditions which might occur on any **individual** farm in the area. The ideal setup would be for each farmer to have a long record made on his own farm. We believe, however, that the Memphis data provide an example which is representative of conditions in the cotton growing area of the Midsouth.

And now the second factor—what is considered a drouth? For the purpose of this report, a drouth period is defined as 14 or more consecutive days with less than 0.25 inch of rain on any one day, and the number of drouth days in season is the sum of the days in the various drouth periods. We recognize that the definition has some fallacies, but some criterion must be established. In a study of the longer drouth periods, I have purposely disregarded some rains slightly heavier than 0.25 inch, as they were ineffective in breaking a drouth.

In Memphis, the average annual rainfall is about 48 inches, with almost 19 inches falling during the period April through August (the period used roughly as the cotton growing season). At first glance, that much rain would appear to be adequate for cotton production as well as for most other purposes; it would be more than ample if it fell just when we needed it and in the quantities desired. Much of it, however, is not effective. Less than 0.25 inch will do no good in a dry period when daytime temperatures may be near 100° for several days in succession. Even 0.50 inch does little good, except for about two days in the heat experienced in the heart of summer—the real cotton season. Heavy isolated rains are also of little actual benefit because a large percentage will run off due to the excessive rate of fall during many of our thunderstorms, from which we get much of our precipitation during the growing season.

Before we get into the 82 years of data, let's look briefly at the last two years—years which stand out sharply in our memory. In 1953, there was a 44-day period beginning May 20 in which there was not adequate rain to

(Continued on Page 54)

Mr. Ginner . . .

Mr. Oil Miller . . .

YOU ARE FAMILIAR with our organization as publishers of The Cotton Gin and Oil Mill Press, the magazine of the cotton ginning and oilseed processing industries. In this capacity, we have served your industry for 55 years, in what we hope is a creditable, responsible, and progressive manner.

WE WANT TO REMIND YOU, however, that we serve ginners and oil millers in another capacity . . . furnishing office and yard supplies of all kinds. Included in our condensed catalog (copy sent on request) are such items as paper and metal tags, gin tickets, cotton knives, letterheads, checks, ledgers, record books — printed forms of all kinds.

YOUR ORDER for this season's supplies will be appreciated and will receive prompt and courteous attention.

Gin Supply Department

The Cotton Gin and Oil Mill Press

3116 Commerce St. • P. O. Box 444 • Dallas 21, Texas

New Ideas for Old Country

Oklahoma A. & M. Helping Ethiopia

■ IN NEXT 10 years more farming changes expected than occurred in five centuries.

By R. L. MILLER
Oklahoma A. & M. College

American know-how has gone to the aid of a country that was old in biblical times, in an attempt to modernize Ethiopian agriculture and improve the economic life of her people.

Livestock, crops, soils and climate of the fabled African country are undergoing a thorough investigation, preparatory to establishment of practices that will tend to care for the country's needs and create surpluses in some instances.

American agricultural experts, most of whom are on loan from Oklahoma A. & M. College to establish the Imperial College of Agricultural and Mechanical Arts, are convinced after 18 months that the potential for tremendous production expansion is there.

Ethiopian crops run the gamut from coffee (which grows wild) to corn, cotton, oats, wheat, barley, sorghums, lush grasses, vegetables, fruits and virtually all plants that can be produced in tropical and temperate zones.

Coffee, for instance, is the chief export crop, although less than 1 percent of the world's market is supplied by Ethiopian growers. Adoption of proven coffee culture practices could raise exports to 5 percent of the world supply, it is believed.

Cotton, most of which is imported, could also be raised in sufficient quantities to fill domestic demands. The jokers are what varieties are better suited to Ethiopian soils and climate and what time of the year is it best to plant?

Most of the cotton grown in Ethiopia is the perennial type. Yields are poor and insects and diseases take a heavy toll.

Extensive research is now under way on climate and soil conditions of prospective areas, variety testing, date of planting, insects and diseases, fertilizers and some breeding investigations.

Varieties used in the first test were Delfos 9169, Stoneville 62, Deltapine 15, Lockett 140, Stoneville 2B, Hibred, Deltapine Fox, Lankart 57, Empire W.R.P. 43 and Paymaster 54. Varieties showing much promise include Delfos 9169, Stoneville 62, Deltapine 15, Stoneville 2B and Deltapine Fox.

The opinion of cotton experts is that soil and climatic conditions are suitable for more cotton production, enough for domestic consumption and possibly some for export. Medium, short-staple varieties seem to offer the best possibilities.

Increased production, however, involves abandonment of centuries-old cultivation methods now practiced in Ethiopia and adoption of new practices. It also involves construction of gins, mills and highways, as well as establishment of markets.

If proper steps are taken, cotton growing could be made one of the most important cash crops for farmers, comparable to coffee in respect to farm income, the experts say.

It's a matter of time and research, but agricultural leaders in Ethiopia are of the opinion more farming changes will take place during the next 10 years than occurred during the previous 500.

BILL ABBOTT, left, is coordinator of work between Oklahoma A. & M. College and the Imperial College of Agricultural and Mechanical Arts in Ethiopia, which the Oklahoma school is sponsoring under the U.S. Point Four program. On the right is Hugh Rouk, agronomist, who directs research at the Jimma station.

• Los Angeles To Be Host To Superintendents

WEST COAST DIVISION of the International Oil Mill Superintendent's Association will hold its eighth annual meeting March 18-19-20 at the Ambassador Hotel, Los Angeles. H. F. Crossno, Downey, Calif., is convention chairman; and H. E. Wilson, Wharton, Texas, is secretary-treasurer of the international organization.

International superintendents, as previously announced, will hold their annual convention at Lubbock on June 5-6-7-8, following the divisional meeting of the West Coast unit.

Oil Content of Tung Nuts Determined in New Way

Oil content of wet or dry tung fruit, tung press cake, and filter cake can be determined rapidly and accurately by using an improved analytical method, say researchers R. S. McKinney and R. L. Holmes of the U.S. Tung Laboratory, Bogalusa, La.

The new method, which performs the determination within half an hour, should prove useful to processors for a rapid analysis of tung products. Results with the new methods are in good agreement with those obtained by four-hour extraction with petroleum ether by the official method of the American Oil Chemists Society, the researchers say.

Here's the new procedure: It uses a high-boiling petroluem naphtha as the solvent. A finely ground sample of the tung material is mixed for 10 minutes in twice its weight of petroleum naphtha. The solution of oil is filtered off, and its specific gravity determined. Oil content is estimated, either by reference to specific gravity percentage tung oil tables or to curves prepared by the Bogalusa workers.

Margarine Output Reaches New High for Six Months

June margarine production of 90,334,000 pounds resulted in an all-time record for the first six months of 684,503,000 pounds.

Production figures for the first half of this year are nearly seven percent above the comparable period last year, said S. F. Riepma, president of the National Association of Margarine Manufacturers. Output for the January-June 1953 period was 640,496,000 pounds.

Production this June ran approximately 12 percent under the same month in 1953 and 1952. "The heavy production rates in the two preceding Junes probably were owing in large measure to stocks built in anticipation of the legalization of yellow margarine in New York State on July 1, 1952, and in Iowa July 4, 1953," Riepma said. He added that June 1954 production actually was 10 percent above the over-all average for the past five Junes.

Per capita consumption of margarine this year is now expected by government sources to run at eight pounds average per person compared to nine pounds for all butter. Last year, when magarine production set a record high of 1,292,000,000 pounds, consumption is estimated to have been 7.9 pounds for margarine and 8.6 pounds for butter.

Progress of the Crop

COTTON has been hurt by another two weeks of hot, dry weather over a large part of the Southwestern and Central Belt and in parts of the Southeast. Most observers felt that the crop was at a very critical stage at mid-August in these areas; without soaking rains soon, damage could become very severe, but needed rains could materially help much cotton. In contrast, Texas' Lower Rio Grande Valley is about through harvesting a good crop, California continued to have ideal weather, and irrigated crop prospects generally were good.

USDA's Aug. 1 cotton report (published on Page 26 of this issue) indicated the second highest yield per acre on record and a crop of 12,680,000 bales. Through July, the report said, California, Arizona and New Mexico had an exceptionally favorable season; Southeastern States were drying and crop development depended largely on August weather; dry weather retarded growth in the Midsouth; and Oklahoma and Texas, except for the Lower Rio Grande Valley and irrigated areas elsewhere, were suffering seriously from the drouth.

Bollworms have been building up in a number of states and are becoming an increasing threat; but the season generally continued to be an unusually light insect year.

Cotton in **ALABAMA** had stopped growing, with much shedding of young bolls and squares, especially in the north. Plants were smaller than usual, but heavily fruited. Picking and ginning had started in southern counties. Temperatures averaged above normal and only light to moderate widely scattered showers were reported. Moisture was inadequate in all areas. Insect damage was light to moderate.

Following a period of near-perfect cotton weather in **ARIZONA**, widespread thunderstorms did some damage to the crop. Hail damage was reported in Cochise and Graham Counties, as well as flood damage along the Santa Cruz River south of Tucson. Picking in stub fields had started, and ginning had commenced in a few spots. Farmers generally were taking steps to control lygus and bollworm infestations.

Growth of **ARKANSAS** cotton had been retarded by lack of moisture, and maturity had been speeded up. Over-all however, the crop had made fair progress. Most cotton was fruiting well, but it was blooming near the top. Several counties reported that early cotton was opening. The first Arkansas bale, produced near Lundell, arrived in Memphis Aug. 7. Some shedding was reported as a result of unfavorable weather. Temperatures have been six or seven degrees above normal, and rainfall has been very spotty. Insect infestations generally were light.

Good progress was the rule in **CALIFORNIA**, where the San Joaquin crop was reported 10 to 14 days ahead of schedule. In Palo Verde Valley high temperatures favored cotton growth, and satisfactory progress was also reported in the Borrego and Imperial Valleys. Ginning had started in Imperial and Riverside Counties. Insect control measures were necessary in the Imperial and Palo Verde Valleys.

Picking started in south and central areas of **GEORGIA**, and bolls were forming well to the north. Cotton prospects were fair to good. Plants were small and yields were expected to be 25 to 40 percent below normal. Weevil infestations were light, while there were scattered reports of heavy bollworm damage.

Cotton made rapid progress in **LOUISIANA**. Older plantings matured rapidly. Rainfall was light and badly needed in some areas. Temperatures continued high, and west winds intensified the need for general rains. Infestations of weevils, bollworms, spider mites and aphids increased slightly.

Cotton condition in **MISSISSIPPI** has been declining, with crops in the southern part better off than those in the dry northern area. Cotton was beginning to bloom in the top and cut out in some areas, and shedding was widespread. Harvest got under way in the south, and first bales were reported in several towns. Hot, dry weather continued, with west winds sapping remaining moisture from the land. Weevil population was relatively low, but Mississippi Extension Service warned of the possibility of a serious outbreak of bollworms.

MISSOURI's crop was generally improved except in dry areas. Light showers fell in the southern third of the state, while the remainder got good rains.

Conditions in **NEW MEXICO** generally continued to be exceptionally favorable for the cotton crop. Irrigated cotton made very good progress, while dryland acreage in the eastern part of the state suffered from lack of moisture. Light rains fell over much of New Mexico.

NORTH CAROLINA cotton was in fair to good condition. The crop was about a week behind last year's. Moisture was adequate in the northeast and northwest parts of the state, but soils were reported too dry elsewhere. Temperatures were slightly above normal. Insect infestations were generally light.

Showers in **OKLAHOMA** offered some relief from drouth conditions, but much of the rain missed the heavy cotton producing sections of the state. Cotton has been seriously retarded by the weather, particularly in southwestern counties. Growth has stopped and shedding started in many sections. In more favored parts of the state cotton growth has been fair to good, but general rains are still needed to prevent shedding. Irrigated cotton is progressing nicely. Weevil infestations are much lighter than usual, while bollworms are active.

Hot, dry weather continued in **SOUTH CAROLINA**, where the cotton crop was described as fair despite the serious drouth. Ginning became general downstate. Plants were still small upstate, but they were fruiting well. Marked increases of bollworms were reported, as well as sharp jumps in weevil population.

Scattered showers in the western part of the state helped **TENNESSEE** cotton; but in other areas, where no rain had fallen, the crop showed signs of wilting, and plants were stunted, blooming in the top and throwing off squares and small bolls. Drouth conditions generally increased in severity. Weevil and bollworm infestations were light.

TEXAS weather continued hot and dry as cotton entered the critical last two week of August. Some observers estimated that one-fourth of the crop had been seriously damaged by drouth; and many felt that injury would become very severe throughout central and eastern areas unless soaking rains come quickly. With considerable premature opening, first bales were being ginned throughout northern parts of the state.

On Texas High Plains a general rain would help; rains fell in spotted areas and were beneficial except where accompanied by hail. Most cotton still held its own but some dryland cotton deteriorated sharply. Irrigated cotton prospects are fair to good.

In Northeast and East Central Texas, heavy shedding was observed and bolls were popping open prematurely. Recent rains in southeastern and southcentral counties were too late to help the crop. In the Coastal Bend area, the crop was open and conditions were favorable for harvest.

The Lower Rio Grande Valley harvest was nearing completion and picking gathered momentum in South, Southcentral and Southeast Texas.

In the Trans-Pecos, cotton was fruiting well. Scattered showers in this region were helpful, but more rain was needed.

Insect buildup continued light in all sections of Texas. Boll weevil infestations continued to decrease, but bollworms were injuring cotton in the eastern third of the state. Fleahopper populations decreased, although control measures were still needed in some fields. Pink bollworm counts generally were under those in 1953.

Offer Made To Buy Chickasha Stock

AN OFFER by John W. Ferguson, Jr., of Fort Worth and Houston, and associates to buy 85,000 shares of stock of Chickasha Cotton Oil Co. at $19 a share was reported Aug. 9 in the Wall Street Journal.

The offer, according to the financial publication, will expire Aug. 25 and may be extended for not more than 10 days. Tenders will be received by Bankers Trust Co., New York.

Ferguson is a director of Chickasha, the story added. Houston Fire & Casualty Insurance Co., General Insurance Corp. and Associated Employers Lloyds, with which he is associated, have holdings of Chickasha stock.

It is understood that if Ferguson and his associates acquire the 85,000 shares, the Journal continued, "they will have control of the company with a majority of its 255,000 outstanding shares. This control would be exercised at the October annual meeting of the company."

• Water Recharging Method Sought

A $5,000 GRANT to the Arkansas Experiment Station by Winthrop Rockefeller, of Little Rock, has been announced by Dr. Lippert S. Ellis, dean of the college of agriculture and director of the station.

The fund is to finance an initial two-month study to determine the feasibility of a research project that would seek ways to recharge the ground water supply that may apply throughout the world.

As an example of the importance of the problem, a recent survey by the University of Arkansas showed that the water level had dropped as much as 20 feet in much of the rice-producing area of the state during the past 20 years.

The study will be made by Kyle Engler, head of the agricultural engineering department; George W. Steinbruegge, professor of agricultural engineering; and L. R. Heiple, professor of civil engineering, all of the University faculty. They will search all literature on the subject in a number of libraries, including the Library of Congress and those of USDA and the U.S. Geological Survey in Washington.

Following their survey of literature, the engineers will make a tour of three or four areas where ground water recharge has been or is now being undertaken. They will be joined on this inspection by Richard Sniegocki, of Little Rock, geologist with the U.S. Geological Survey, and Ben W. Dees, engineer with the Little Rock architectural firm of Ginocchio, Cromwell & Associates, who will represent Rockefeller.

If their report indicates additional research is needed and that ground water recharge is economically feasible, Dean Ellis said, it is possible that Rockefeller will support a specific research project by the Arkansas Experiment Station to determine a successful and economical method of restoring ground water supplies. Such a project might require five years and entail an expenditure of several hundred thousand dollars, he added. Findings would benefit agricultural and industrial interests throughout the world.

"This is a project that we have been wanting and needing to undertake for some years," Dean Ellis decared, "but have been prevented by a lack of funds. Now that Mr. Rockefeller has made this public-spirited gesture, we have high hopes that we can eventually find a solution to one of the serious problems facing the world today."

Seed Analysts Meet

The Association of Official Seed Analysts met at Iowa State College, Ames, recently. Officers elected included Buford Jones, Oklahoma Department of Agriculture, Oklahoma City, president; O. L. Justice, USDA, Beltsville, Md., vice-president; and R. G. Colborn, Nebraska Department of Agriculture, Lincoln, secretary-treasurer. Retiring president is Dr. Duane Isely, Iowa State College. The 1955 meeting will be held in June at Oklahoma A. & M. College, Stillwater.

Georgia To Honor Winners In 4-H Cotton Programs

Twenty - eight Georgia youngsters—district winners in cotton production and marketing and cotton and its uses projects—will be honored at the annual state 4-H Club cotton rally in Macon, Aug. 17-18.

Sponsored by the Bibb Manufacturing Co., the event will feature cotton exhibits arranged by the 4-H members, a swimming party, banquet, tour of one of the Bibb mills, and a sightseeing trip through Macon.

Winners in the cotton and its uses project who will be honored at the rally are: Carolyn Fletcher, Tift County; Janell Smith, Thomas; Margaret Quante, Chatham; Linda Powell, Emanuel; Betty Watson, Candler; Nadine Brown, Quitman; Myrna Bruner, Early; Glenda Ingram, Grady; Camille Hagert, Henry; Jean Stover, DeKalb; Nina Williams, Spalding; Margaret Stule, Richmond; Saralyn Trawick, Hancock; Carolyn Webster, Chattahoochee, and Hazel Davis, Whitfield.

Cotton production and marketing champions who will attend are: Melvin Edwards, Irwin County; Jack Vickers, Coffee; Jack Roberson, Emanuel; Jerry Strickland, Evans; Julian Cannady, Candler; Hoke Reed, Jr., Dooly; Berry Thomas Yaughn, Peach; Kenneth Williams, Macon; John William Shaw, Polk; Frederick Thompson, Fulton; William Dozier, Richmond; Oscar Dunn, Hancock; William Clary, Jr., Warren, and David Hembree, Bartow.

On Texas High Plains

6,000 New Wells Drilled in 1953

■ SURVEY shows rapid development of water resources in leading cotton area.

Development of ground water resources on the Texas High Plains in 1953 increased at a rate unsurpassed since pumping began in 1911, according to the annual report of U.S. Geological Survey and Texas Board of Water Engineers. The area, a leading cotton section, drilled about 6,000 new wells in 1953.

Near-drouth conditions prevailed in the area during 1953, the report points out. Precipitation at four stations averaged only 55 percent of normal and was the smallest since 1896 at one of the stations.

• **Many Wells Drilled**—The report summarizes developments on the High Plains as follows:

"In 1940 about 2,180 wells were used to irrigate approximately 250,000 acres. By the end of 1950, approximately 14,500 wells were in use and about 1,900,000 acres were irrigated. The area irrigated in the entire High Plains increased from 2¼ million acres in 1952 to 3 million acres in 1953, an increase of about one-third. Essentially all the water is pumped from the Ogallala formation, the deposit of sand, gravel, clay, and caliche that underlies and forms the High Plains.

"During 1953 about 6,000 wells were drilled—35 percent more than during the preceding two-year period 1951-52, and of these wells more than 85 percent were drilled in the principal irrigated region of the southern High Plains. By the end of 1953 about 24,500 wells were in use or available for use, of which 93 percent, or 23,000, were in the principal irrigated region. Of the remaining 1,500 wells, about 1,000 were in the more southerly counties of the High Plains. The area irrigated in the principal irrigated region increased from 2,150,000 acres in 1952 to 2,900,000 acres during 1953.

"On the basis of these estimates, it appears that in the principal irrigated region there has been a slight decrease in the number of acres irrigated per well. It is reported that a large number of irrigators have been compelled to drill supplementary wells to obtain enough water. This may be attributed to the low rainfall, which increased the need for pumped water, or to the decline in yield of some of the older wells."

• **Withdrawal of Water Heavy**—The report estimates withdrawals of ground water on the basis of number of acres irrigated, the duty of water per acre and the operating time as obtained from data on consumption of electricity. It says:

"Since 1938 the withdrawals of ground water from the Ogallala formation have increased each year except during those periods (principally 1941) when precipitation was above normal and the demand for irrigation was relatively light.

"Owing to drouth conditions, the withdrawals of ground water for irrigation, municipal, domestic, and industrial supplies increased from an estimated 3,750,000 acre feet in 1952 to approximately 4,800,000 acre feet in 1953, or about 28 percent. Of the pumpage in 1953, approximately 90 percent or 4,300,000 acre feet was withdrawn in the principal irrigated region, an increase of about 1,100,000 acre feet. About 75,000 acre feet or about two percent of the total was withdrawn for municipal and industrial use.

"Since 1938 approximately 16 million acre feet of ground water has been pumped, of which more than 60 percent has been pumped since 1950. Assuming a specific yield of 15 percent, the withdrawals of ground water in 1953 unwatered 32 million acre feet of saturated material and the withdrawals since 1938 have unwatered about 105 million acre feet."

• **Water Levels Drop**—The continued decline in water levels is reported as follows:

"Prior to 1953, irrigation was concentrated in relatively small areas and the declines of the water levels in wells were confined largely to those areas. Since 1943, however, irrigation has spread out to form one large district, which in the principal irrigated region in the southern High Plains embraces all or parts of 19 counties.

"During 1953 the water levels in most of the 476 widely distributed observation wells were at their lowest level since 1938, when records began in most of the wells. Records show that in 1953 the numerical net average decline of water levels was 4.9 feet, as compared with 3.9 feet in 1952. The available data show that in Floyd County the average net decline in 71 wells was 6.3 feet, compared with 5.3 feet in 1952. The maximum decline recorded during 1953 was 11.9 feet, which occurred in the area of concentrated pumping in west-central Floyd County."

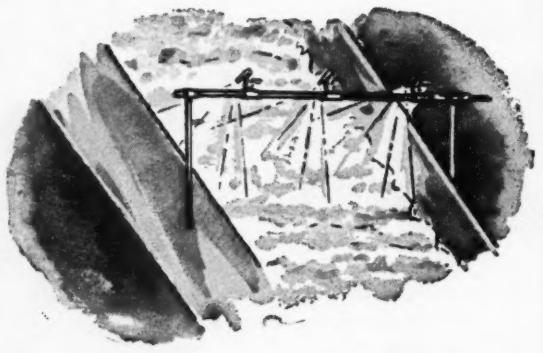
A map published in the bulletin shows that the water level declined two feet or more from January 1953 to January 1954 throughout a large area, including about 4.2 million acres.

"It shows that the great bulk of the water pumped in 1953, like that in previous years, was derived from storage," the author comments.

"The pumping has not been distributed uniformly over the area but has been greatest in certain districts. As a result, water levels have declined as much as 67 feet in an area of a few square miles southeast of Plainview and from 50 to 60 feet in the areas southwest of Amarillo and around Lubbock.

"Although it is in those areas of concentrated pumping that the greatest unwatering of material has taken place, attention should be directed to those areas where the water level decline has been somewhat less, but where the saturated thickness has been reduced the most percentagewise because it was less at the beginning. In the southern part of Lubbock County the saturated thickness before pumping began in 1938 was considerably less than the average throughout the southern High Plains. By January 1954 the continued decline of water levels had reduced the saturated thickness by roughly one-half.

"As the water levels decline, it becomes increasingly important to regard the decline in water levels in terms of the thickness of the remaining saturated material. Areas such as those in the southern part of Lubbock County and southeast of Plainview, where the Ogallala formation is relatively thin, can be expected to experience diminishing yields sooner than the areas where the saturated sands are thicker."



NO GIN IS COMPLETE without a STATIFIER

Now that most gins dry seed cotton to a very low moisture content in order to gin it properly, they need to restore a small amount of moisture to the ginned cotton. This relieves strain on the tramper and press, eliminates the problem of broken bale ties, and restores some of the staple length and soft feel to the sample. For details on how Statifier moisture restoration can help in your ginning operation, write us today.

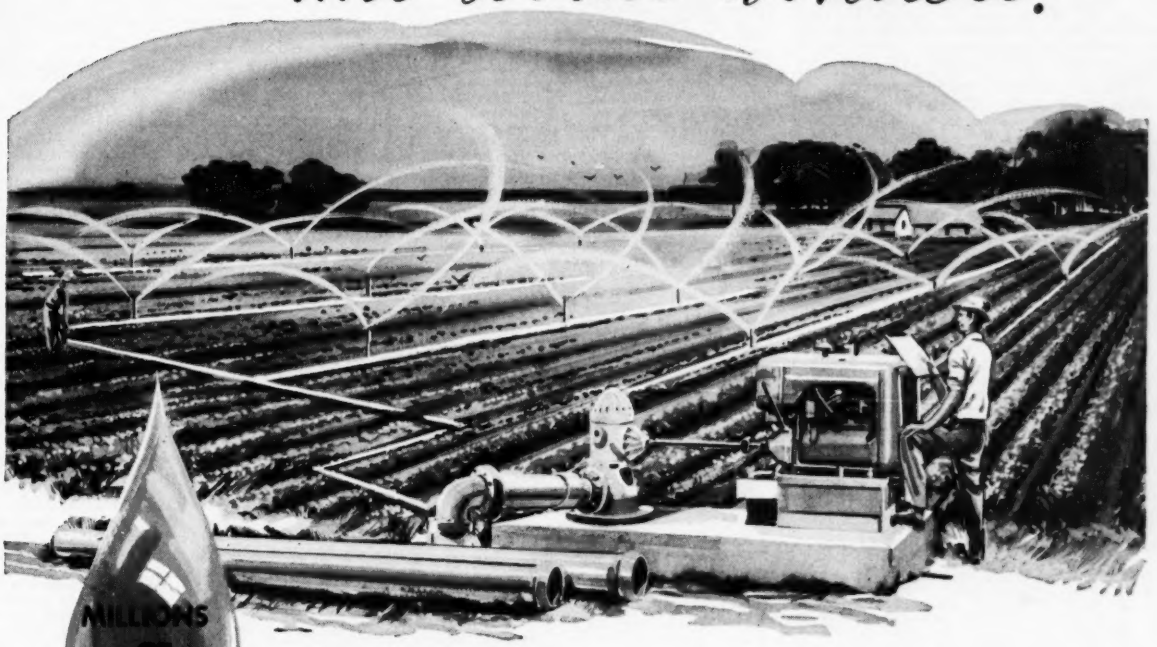
KEMGAS COMPANY
Box 5007 LUBBOCK, TEXAS

Spain Prefers U.S. Lint

Spain prefers U.S. cotton and would import more if dollar exchange were available, USDA reports. U.S. cotton is expected to account for about 225,000 of the 325,000 bales which Spanish importers have set as their import goal for 1954-55.

Spanish imports during the past season were approximately 312,000 bales, about 60 percent from the U.S.

Miracle Fluid: WATER *...it works wonders!*



MILLIONS OF DOLLARS **are spent annually in pumping or storing and distributing water for America's farms.**

Water transforms once-barren lands into fertile, productive fields. It is also a dependable standby to combat long, damaging droughts.

In some regions, government irrigation projects or private irrigation companies make the water available. In others, resourceful farmers pump water from wells or from rivers.

Wells, dams, ponds, lakes, rivers, springs—all available sources are enlisted. Pumping systems start the flow of water through a network of ditches or pipelines to the fields. There, applied directly or by sprinkler systems, the water works its magic.

As the effort to provide additional irrigation water continues, ways to use it more efficiently are constantly being sought. Each step forward brings with it increased prosperity for American agriculture.

***WATER** is one of our most valuable resources. Anderson, Clayton & Co. recommends its conservation and efficient use, and endorses scientific irrigation as one of the sound practices of good farm management.*

50th ANNIVERSARY — COTTON AND COTTONSEED PRODUCTS — ACCO — 1904-1954

ANDERSON, CLAYTON & CO.

(INCORPORATED)

HOUSTON • ATLANTA • MEMPHIS • BOSTON
LOS ANGELES • NEW ORLEANS • NEW YORK

Mrs. Tucker's SHORTENING • SALAD OIL • *Meadolake* MARGARINE • *Paymaster* FEEDS • COTTON PLANTING SEED • *Sunny Southland* FEEDS

Classified Advertising

RATES AND CLOSING DATES: Ten cents per word per insertion. Include your firm name and address in making word count. Minimum charge $2.00. Copy must be in our hands by Thursday morning of week of issue. Please write plainly.

Oil Mill Equipment for Sale

FOR SALE—One Ft. Worth steel sample seed shaker; Carver Tru-Line gummer for 176-141-106 saws; one Butters milling machine for 141 saws; Chandler 42" bar huller; Carver late type 48" huller; French and Buckeye 85" stack cookers; four pass Ft. Worth steel lint beaters, for first and second cut linters; Continental all steel and steel bound up packing single box linter baling presses; rebuilt Anderson Duo and Super-Duo expellers; 106-141-176 saw linters; boilers, pumps, filter presses, screening tanks.—Address V. A. Lessor & Co., P. O. Box 108, Ft. Worth, Texas.

FOR SALE—Four press hydraulic mill at Pittsburg, Texas to move, sell all or any part.—Stone L. Hargrove, Harlingen, Texas.

FOR SALE—Oil Mill Machinery: Prater DF-9 Blue Streak, Williams and Jacobson grinders. 5 high crushing rolls. Meal coolers. Screening tanks. Filter presses, Redler conveyors. Good condition. Contact—Lee Atherton Letter or phone Atlantic 2112. Archer-Daniels-Midland Co., Minneapolis, Minn.

FOR SALE—All kinds cotton gin and oil mill equipment, expellers, screw presses, screening tanks, filter presses, natural gas engines, one GMAC No. 465 automatic box nailing machine with motor and some spare parts.—Carter Foster, Jr., P. O. Box 522, Temple, Texas. Phone 3-4890, warehouse 502 North 14th Street, Temple, Texas.

FOR SALE—Anderson Super Duo expellers, each complete with 14" conditioner and 36" cooker; rolls, cookers, 176 and 141-saw Carver linters, all completely rebuilt. Fort Worth lint cleaner, filter presses, attrition mills, No. 199-60" seed cleaner, No. 153 separating unit, No. 136 double drum hull beater.—Sproles & Cook Machinery Co., 1212 South Industrial Blvd., Telephone PR-5958, Dallas, Texas.

FOR SALE—New 12 x 18 type "RCD" rotary positive displacement Roots-Connersville blower to handle at the inlet 1540 c.f.m. air discharging at 4# gauge pressure when operating at 510 r.p.m. requiring 35 b.h.p., complete with 40 h.p. motor. New Tyler Niagara vibrating screen for copra type 300 Ser. #9417, 9' 6" overall base frame 4' x 8' sgl. surface vibrating screen, 2 screens 4' long each, 6'-2¾" wide complete with 5 h.p. Westinghouse motor and magnetic switch. (2) New Tyler Hummer electric vibrator with hummer screen. #10203 frame 10' long, 4' 8" wide 38" high. Ser. No's 50-1738-9. (2) New Williams cake grinders size 30, 10' 3" long. 24¾" wide. Serial No's 11447-8., one with 100 h.p. motor. Contact—Lee Atherton, Letter or phone Atlantic 2112. Archer-Daniels-Midland Co., Minneapolis, Minn.

Electric Motors

Sales
. . Repair

Partial list of motors in stock:

1—300 hp. 3/60/2300/900 rpm, slip ring
1—250 hp. 3/60/440/900 rpm, slip ring
4—200 hp. 3/60/2200/900 rpm, slip ring
6—200 hp. 3/60/440/900 rpm, slip ring
4—150 hp. 3/60/2300/900 rpm, slip ring
2—150 hp. 3/60/440/900 rpm, slip ring

• **Call us anytime—day or night, anywhere—and we will deliver a loan motor to your plant via one of our standby trucks and pick up your equipment for repair.**

W. M. Smith Electric Co.

Lubbock	Dallas	Harlingen
3-4711	HU-2801	3965

OIL MILL EQUIPMENT FOR SALE—Complete solvent plants, rebuilt twin motor Anderson high speed expellers, French screw presses, stack cookers, meal coolers, filter presses, oil screening tanks, complete modern prepressing or single press expeller mills.—Pittock and Associates, Glen Riddle, Pa.

FOR SALE—Four 1949 model French screw presses with 5-high 72" Frenco Drive cookers.—Delta Oil Mill, Attn. H. S. George, Jonestown, Miss.

FOR SALE—Anderson Twin Motor Super-Duo 36" cooker expellers complete with motors and electrical starting equipment. Purchased new in 1946, operated approximately 3 years. Excellent condition. Present arrangement for flax and soybean, will rebuild for cottonseed if desired. Contact—Lee Atherton, Letter or phone Atlantic 2112. Archer-Daniels-Midland Co., Minneapolis, Minn.

FOR SALE—#199—48" Bauer seed cleaner, with cyclone and pipes; #143—Bauer drag elevator, 15' 6" centers; True Line Gummer for 106 saw cylinder; Continental, all steel, single box, up packing, 24 x 48 linter baling press; 9½" ram and casing; 30" Chandler huller; 36" Carver huller; eight linter Fort Worth pneumatic lint flue system (bought in 1950 new) with 4 pass Fort Worth lint cleaner and fans; 10 Carver 106 perfection saws linters—will sell cheap; 72"—4 high-30 rings all steam jacketed, French cooker; three—15 box, square columns, French hydraulic presses, if need repairs will sell less than full unit, boxes in good shape; set 48" French rolls; two—12 ton French accumulators; French hook type cake stripper and French hydraulic pump; 10 k.w. generator; Murray Corliss steam engine, 18 x 42, fly wheel 14'; 26" triple ply—94' 10" leather drive belt, (bought in 1950); one 66 x 18—150# Murray H R T boiler; two gas burners for steam boilers; one Burnham boiler feed pump, 8½ x 5 x 10 #68048; one coupling type clutch, 100 h.p.—3 7/16 bore; one coupling type clutch, 35 h.p.—2 7/16 bore; fans, shafts, flange type couplings, steel split pulleys, conveyors, hangers and other small items; four 80-saw Murray air blast gins, with 6" mote conveyor; one Gullett RAL separator, over Gullett all steel 6 cyl. horizontal gravity cleaner; one Murray steel belt distributor; one Gullett multiple hull extracting feeders; one all steel double hopper seed scale.—Brady Cotton Oil Co., Paul Klatt, secretary, Brady, Texas, phone 2322.

Gin Equipment for Sale

FOR SALE—One Murray big reel drier; one Murray 52" separator.—Write W. H. Ritchey, Hendrix, Oklahoma, or call Harold Franks, Haslet, Texas.

GIN EQUIPMENT FOR SALE—3-80 Continental gin to be moved, complete with Mitchell feeders; 6 cylinder horizontal Murray cleaner; Murray conveyor-distributor; 1 M Mitchell burner; two story press; condenser; Fairbanks-Morse diesel engine; steel tank and all related items. One rebuilt 5 cylinder Hardwicke-Etter cleaner, V drive, like new, $900; one rebuilt 6 cylinder horizontal Murray cleaner on V drives with blow-in transition and dirt hopper bottom, $1,000; new 24-shelf tower drier, $1,350; 12-shelf tower drier, $750; 3-80 Murray gin, complete with mote suction devices, glass fronts, $1,100; 3-80 Cen-Tennial gin stands, 1949 model, with lint flues, $350; 7-80 Lummus gin stands, 1937 model, $100; 3-80 Cen-Tennial stands, 1940 model, $100; 72" Murray down-draft steel condenser, never been used, $1,400; two No. 80 Mitchell vaporizers, each $150; three Mitchell standard units, 1942 model, completely rebuilt on V drives, $475; 6-80 Cen-Tennial gin stands, 1947 model, $300; two ½ million Mitchell burners, each $260.—Wonder State Mfg. Co., Paragould, Ark.

SEASONAL CLOSE-OUTS—One horizontal hydraulic press pump, $150; one Continental paragon cotton press, $650; one all steel Cameron tramper, $400; 5-80 saw Lummus gin stands, $300 each; 5-66" L.E.F. feeders, $250 each.—Hughston Sales Co., 2944 Oak Lane, Dallas, Texas, HU-5321.

FOR SALE: To be moved—4-70 Murray gin; 4-70 Mitchell extractor feeders; one Murray 5-cylinder airline cleaner; one Murray incline 6-cylinder cleaner with late model press and condenser, all electric power. Gin in good condition and has run every year.—Artesia Alfalfa Grower's Association, Artesia, N.M.

FOR SALE—Four 66" V-belt convertible Mitchells.—Jack Coffman, phone 736-W-2, Floydada, Texas.

FOR SALE—Cotton gin in Grimes county located Iola, Texas; excellent condition, large warehouse with three acres of land. Phone Navasota, Texas 5-6815 or write P. O. Box 191, Navasota, Texas.

FOR SALE—Partial list of excellent late-model steel machinery for your gin plant. Several all-steel 80-saw air blast gins including Continentals with Model 30 fronts, glass-front Lummus, Gulletts and standard Murray. One Wichita and one Lummus 14 foot steel bur machines. One all-steel Continental down-packing press with ram, casing and hydraulic manifold. One 4-cylinder, one 6-cylinder, 50-inch and one 6-cylinder, 72 inch Continental and one 5-cylinder, 52-inch Murray incline and one 6-cylinder, 48-inch horizontal Lummus steel cleaner. One 1953 model, 52-inch Stacy and one 50-inch Continental separators. One steel Lummus conveyor distributor for right-hand outfit. Large selection of late model steel condensers, press pumps, trampers, fans, and hundreds of other excellent items for your gin plant. Three 10 h.p., one 20 h.p., one 40 h.p., and two 100 h.p. electric motors. One 25 h.p. Continental and one 46 h.p. Case gasoline power units. Other power available. For your largest, oldest and most reliable source of guaranteed, late-model used and reconditioned gin machinery, contact us. Qualified graduate engineer to assist you with any of your machinery problems at no obligation. Call us regarding any machinery you have for sale or trade.—R. B. Strickland & Company, 13-A Hackberry Street, Telephones: Day 2-8141, Night 3-7929, Waco, Texas.

FOR SALE—Cotton gins, oil mills and compresses. Some for operation where located, others for sale to move. If interested contact M. M. Phillips, Phone 5-8555, P. O. Box 1288, Corpus Christi, Texas.

Personnel Ads

WANTED—Night superintendent for oil mill. Must be capable, sober, steady worker. Mail particulars as to age, experience and references with application.—Vernon Oil Mill, Vernon, Texas.

WANTED—Capable ginner that has experience on Murray gins. Must state experience and wages expected in first letter. Season starts about the first part of September. West Texas territory.—Write Box "VL", c/o Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas, Texas.

Power Units and Miscellaneous

FOR THE LARGEST STOCK of good, clean used gas or diesel engines in Texas, always see Stewart & Stevenson Services first. Contact your nearest branch.

FOR SALE—New and rebuilt Minneapolis-Moline engines, from 35 h.p. to 220 h.p., call us day or night for parts and service.—Fort Worth Machinery Co., 918 E. Berry St., Fort Worth, Texas.

FOR SALE—One D-17000 Caterpillar, completely overhauled, equipped for cotton gin service, $2,750; one LeRoi butane equipped RXIS 100 h.p. engine, completely rebuilt with factory warranty, $1,500; one D-13000 Caterpillar, good condition, $1,200.—Wonder State Mfg. Co., Paragould, Ark.

FOR SALE—One row Allis-Chalmers cotton picker, used only one season. Will sell for ½ of cost.—Write or call Farmers Gin Co., Bolivar, Tenn.

FOR SALE—One 30 h.p. boiler, good condition. One ½-inch Black & Decker drill.—H. L. Trammell, Sandy Point, Texas.

Combed Sales Yarn Use Reported by Council

The latest figures (1952) show that about 798,000 bales of cotton were utilized in making combed sales yarn in that year, with 81 percent of consumption going into underwear, hosiery, thread, government fabrics and outerwear, the National Cotton Council reports in a special survey.

The survey, conducted by the Council in cooperation with the Southern Combed Yarn Spinners Association, was undertaken to develop more factual information on the demand for combed sales yarn and to analyze competitive problems faced by cotton.

The Council reports that the combed sales yarn industry, which operates approximately 2,270,000 spindles, is a primary source of yarn for manufacturing plants without spinning equipment. It also is a supplemental source of combed yarn for integrated spinning and weaving establishments. During military emergencies, the industry is of strategic importance as a source of combed yarn.

Arkansas Counties Added To Drouth Area; Total 196

USDA reported on Aug. 9 that counties designated as drouth areas totaled 196, as 11 Arkansas counties were added to the drouth listing. Arkansas counties placed in the emergency category included Benton, Boone, Carroll, Crawford, Franklin, Johnson, Logan, Madison, Newton, Sebastian and Washington.

Colorado and Texas each have had 23 counties designated as drouth areas, Wyoming 13 counties, New Mexico 24, Oklahoma 26 and Missouri 76 counties.

Cotton in Western U.S. Is Booklet Subject

A summary of papers presented at the Western Cotton Production Conference held at Phoenix last spring has been published by the Southwest Five-State Cotton Growers' Association, Arizona Cotton Growers' Association and the National Cotton Council.

Entitled Western Cotton Production, the booklet digests discussions heard there on diseases, weed control, insect control, defoliation, soil fertility problems and quality of cotton desired by mills.

• Sex Life of Grasses Bothers Breeders

GRASS ISN'T just grass, scientists will tell you. And trying to produce hybrid strains which will be drouth resistant is a task of no small size. One of the big difficulties is the curious sex life of the different species.

Generally, if grasses are drouth-resistant, they aren't much good as cattle feed. If they make good grazing, they are generally not drouth-resistant. A cross, having the desirable qualities of both types, is desperately needed in the sun-scorched Southwest.

However, the different species propagate themselves in different ways. This makes the plant breeders' job difficult.

Some grasses set their own seeds without any fertilization from another plant. The flowers of others never open. The number of chromosomes, the heridity-carrying units, varies from one species to another. Chromosome numbers have to match for successful cross-breeding.

The Plant Research Institute at the University of Texas, Austin, directed by Dr. W. Gordon Whaley, is one of the institutions studying this problem. He points out that from one billion acres of grassland come one-half of the nation's meat, most of its leather, wool and mohair as well as many drugs and other products. Drouth, he emphasizes, cuts this production; thus the search for drouth-resistant grass.

New Mexico Station Plans Irrigation Field Day

New Mexico Experiment Substation at Tucumcari will hold its fourth annual Irrigation Field Day Aug. 24, says David H. Williams, in charge of the experimental work.

The morning will be devoted to tours of irrigated research plots, and in the afternoon the program will include discussions on weed control, techniques of irrigation, production costs for growing alfalfa and grain sorghums by irrigation, and use of roughages in cattle feeding.

Visalia Gin Officers Named

Officers of Visalia (Calif.) Cooperative Gin were re-elected at the recent annual meeting. They include N. C. Piepgrass, president; Ed Hill, first vice-president; Clyde Hash, second vice-president; Gerald Steiner, treasurer; and Le Roy Mills, secretary.

Bee Line Following Blossom Trail

Honey Braceros Reap Rich Rewards, says this story From Lubbock Avalanche

ANY HONEY BEE tired of the same old sights and same old meals year in and year out ought to apply for work with the Big Bend Honey Co., Marathon, Texas.

Bees working for this outfit follow a blossom circuit that takes them from the lush orange groves of the Rio Grande Valley to the blossoming clover, alfalfa and cotton fields of the High Plains of Texas every year.

Besides all the travel benefits, a Big Bend bee gets a four-months' paid vacation every year plus luxurious lodgings.

Working conditions are pleasant, but owners Harvey and Howard Hatch, twin brothers, expect their bees to produce. Right now, the Hatches have 1,000 work camps —hives, that is—in the Plainview region and the bees stationed in them are gleaning their sweets principally from clover and alfalfa.

Soon, however, the bees will find richer sipping in the fields of irrigated cotton.

In all, the Hatches have 1,500 hives—quite an increase from the 16 they started out with back in 1932. From February through September every year, they and their workers are busy migrating northward with the growing season.

In October, they make a bee line back to the Valley, where they rest through January. That is, the bees rest. The Hatches are generally busy getting ready for a repeat swing through the honey-producing regions.

The Hatch brothers started in their unusual business to commercialize on the honey. Nowadays, though, they "rent" bees for pollination, especially in vetch fields. Vetch produces poor honey yields and the operators can not afford to keep their charges on that crop exclusively for the honey yield.

In the Plainview region, the bees not only produce excellent honey but—although the bees may not have ever stopped to think about it—they also perform a significant job in increasing alfalfa, clover and cotton production.

Most of the hives have three or four supers. The Hatches never permit their hives to swarm if they can help it, preferring for economy reasons to divide swarms when they become over-size.

The bees go on duty in February and one can imagine how delighted they must be to get back at the old grind. They certainly could not end the winter's idleness in more pleasant surroundings, for they go back to work in the orange groves of the Rio Grande Valley.

After about two months among the orange blossoms, during which time they do a pollination job worth many thousands of dollars to the orange growers, the hives are loaded on trucks at night while the workers are at home and transported to the Uvalde region where they are put to work among the mesquite in bloom to gather honey of a particularly tangy flavor.

In May, the hives are transported to Freestone County where they keep on the job for a few weeks pollinating vetch. From that area they go to the Plains.

The bees are used to pollinate alfalfa if the fields are to produce seed crops. When their Plains assignment is finished in late September the hives make the 400-mile trek to Marathon—there to dream perhaps of the sunshine and flowers that have been their honeyed lot.

The Hatches extract the honey from the comb mechanically, taking the contents of 45 frames in from 15 to 30 minutes. The comb is returned to the hive, a time saver for the bees, as it takes several pounds of honey to make a pound of comb.

The beemen say the bee pollination increases cotton yield up to 35 percent and raises the yield of alfalfa seed as much as 1,000 pounds to the acre.

The brothers, both single, have been so closely associated with their charges for the past 22 years that they apparently think like bees, for they are neat and orderly in their operations and keep as busy as bees.

They handle the hive robbing process casually and without protection from the bees—and they are immune to swelling when they are stung.

They couldn't estimate how many times they've been stung, but it ought not to be many. People say, you know, that a bee dies whenever it stings someone—and, with the deal the Hatches give them, what bee would be crazy enough to commit suicide?

(Continued from Page 46)

break the drouth. Then beginning July 22, there was a 96-day period, ending after the cotton growing season, in which the total rainfall was less than two inches. In 1952, there was a 61-day drouth covering the critical months of June and July, with only 0.87 inch of rain during the entire period and with the largest daily amount being 0.32 inch.

For the 82-year period, we must keep in mind that we are dealing with data for the cotton growing season ending in early September. During the 82 years, records show:

One drouth of **103 days** duration;

Two other douths **more than two months in length;**

Five drouths between **1½ and two months long;**

32 drouths between **one and 1½ months long;** and

198 drouths **of 14 days to less than a month long.**

The numbers of drouths of intermediate length in this tabulation are increased considerably if you disregard some rains of more than 0.25 inch but which did not actually break the drouths. I know it is difficult to grasp the figures just given, so let's dump all of them into one pot and reduce them to an average. The average is **three** drouths per cotton growing season, covering a total of **67 drouth days** for the season. This compares with an average of 150 drouth days per year if the entire year is considered, broken down into six periods of about 25 days each, on the average.

Incidentally, I wish to point out that it appears from the 82-year record that drouth years are sometimes close together and disastrous results may accumulate (the period 1940 to 1944 was the most recent); and that we may be at present in the third year of such a series. But do not misunderstand me, I certainly would not attempt to forecast general weather conditions for the next year or two.

During the 82 years there were only **three** years when no drouths occurred during the cotton growing season; only **seven** years with less than a total of 30 drouth days; and only **34** years with less than 60 such days. In other words, in about 6 years out of 10 we may expect to have a total of 60 or more drouth days during the season.

The 82-year average number of drouth days per month increases from about **six** in April to about **15** in July and **17** in August—the very months that cotton needs the greatest amount of water. We can expect drouth days in about 4 years out of 10 in April, with an increase to about 8 years out of 10 in August. The May to July average is only slightly less than that of August.

There is little correlation between total annual rainfall and the total number of drouth days during the growing season. Normally, we might expect that the largest number of drouth days would fall in those years with the least rainfall, and vice versa. But we have in one case **no** drouth days in a year with almost a record low in rainfall and in another a total of over 100 such days in a year with more than 60 inches of rain. Just last year, we had rather long drouth periods, but annual rainfall was two inches above the average.

It is also found that total monthly amounts of rain are of little value in detecting drouth periods, unless the entire month has practically no rain. Many months in serious drouth years have rainfall much above normal, but in a considerable number of cases the rain falls at an excessive rate, much of it runs off, and the crop receives little permanent benefit unless more rain falls in a few days.

The rainfall pattern **in the cotton growing season** has changed somewhat over a long period of years. If we divide the 82-year record into two equal periods, we find that June to August rainfall was **25 percent or more above normal** in 18 years during the first period, and in only 12 years in the second period; that April to July and September rainfall was **25 percent or more below normal** in 13 years during the first period, but it increased to 17 in the second.

Contrary to popular belief, our **annual** rainfall has been increasing in recent years. The low point was reached probably in the late 30's.

Physical Essentials, by Ivan D. Wood, Denver, Extension Soil Conservation Service Irrigation Specialist

THE ACTUAL physical essentials for irrigation are water supply, equipment or structures for applying the water to the land, and the land itself.

• **Water Supply**—Without proper water supply, irrigation of any crop is, of course, usually unprofitable and often impossible. The main types of water supply are wells, streams, rivers, lakes, and farm ponds. It is extremely important to investigate water supply before purchasing irrigation equipment or leveling land with the idea of using gravity irrigation. In my trips to the Southeast, I found considerable misunderstanding regarding the use of the farm pond. Many farm ponds contain less than five acre feet of water, which might conceivably be used to irrigate 8 to 10 acres of land, but certainly not a large area. A single lake or stream may have enough supply and enough recharge for one farm, but once irrigation is started, perhaps other tracts of land may be irrigated from the same supply, in which case trouble may soon be experienced.

In many areas the irrigation well is the only dependable source of supply. Some states have made extensive ground water surveys and have accurate information as to location, thickness of the aquifer, recharge rates, and dependability of the supply. Other states do not. Before investing in expensive wells and pumping equipment, the farmer should have the best information obtainable regarding the dependability of the supply. I have found in my travels in Eastern States that little or no information seems available on the correct methods of drilling irrigation wells, on the proper type of pumping equipment, and the power to use it. Techniques of designing and developing irrigation wells are fairly well established in old, irrigated areas, but much information is needed in new areas to avoid costly mistakes.

Pumping equipment from open bodies of water is fairly well standardized and consists of horizontal centrifugal pumps, or propeller type pumps, driven by electric or internal combustion motors. Due to the fact that the static lift is often low, poor efficiency is not so costly as in the case of deep wells, but nevertheless, it is a factor to be considered. If an efficient plant is to result, the pump and the power plant must be well matched, and the pump must be designed for the job it is expected to do.

KYLE ENGLER, Fayetteville, Ark., supervised the tour and demonstration which took place the final day of the Conference. Engler is head of the agricultural engineering department at the University of Arkansas.

Pumping equipment for wells is expensive, and efficiency often may determine whether or not the irrigator makes a profit from his venture. The equipment is usually the deep well turbine, either directly connected to an electric motor or driven by an internal combustion motor connected through a shaft and gear head.

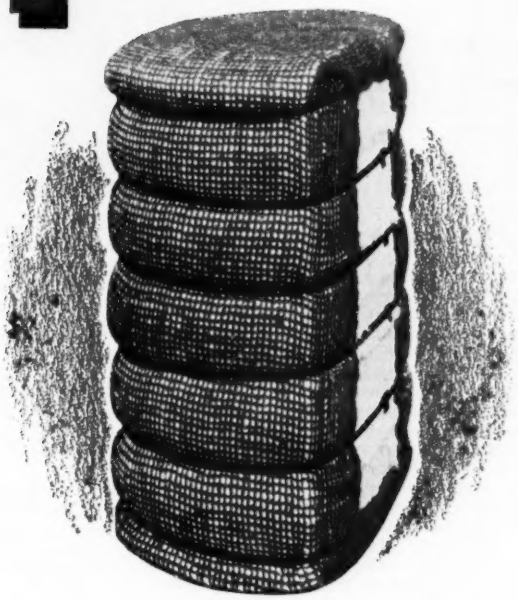
It is essential that the characteristics of the well be determined in advance. In other words, it must be known what the yield of the well is at various stages of drawdown. Then the pump must be fitted to the characteristics of the well and the power plant fitted to the pump. There are thousands of cases of tragic misfits in all pumping areas and these cost the irrigator untold thousands of dollars.

• **Application Equipment**—It is probable that sprinkler equipment will be used on most irrigation projects in the Eastern and Southern States, although this is not universally true. Fortunately, many distributors and dealers are well equipped with engineering personnel who can correctly design sprinkler equipment and teach the farmer to operate it. Through the medium of irrigation schools conducted by colleges and universities, sprinkler equipment dealers and distributors are performing pretty well in accordance with the American Society of Agricultural Engineers' "minimum requirements for the design, installation and performance of sprinkler irrigation equipment."

I believe it is highly essential that the irrigation farmer purchase his sprinkler equipment from one reliable concern rather than shopping around and buying it a piece at a time. In older irrigated areas the latter practice has resulted in no end of trouble, not only for the farmer, but for the dealer and distributor as well. Sprinkler equipment is not cheap. A survey of some 70 systems in Colorado indicated a first cost

4 GOOD REASONS FOR USING

Carolina JUTE BAGGING

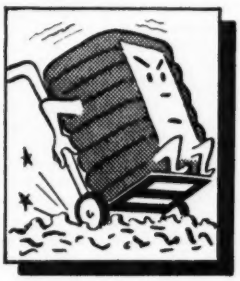


EXTRA STRENGTH

Carolina Jute Bagging is extra strong . . . tested for uniformity. Full yardage and full weight is guaranteed.

TAKES ROUGH HANDLING

Stands up well under rough handling . . . protects cotton both in storage and during shipment.



MAXIMUM PROTECTION

Cotton is subject to less weather damage than that covered with closely woven cloth.

LOOKS GOOD LONGER

Open weave admits sunlight and air . . . keeps cotton dry and in good condition. Looks better after cutting sample holes.

Carolina BAGGING COMPANY

HENDERSON, N. CAROLINA

MANUFACTURERS OF BAGGING AND TIES

of about $90 per acre, the range being from $45 to more than $200. The University of Michigan indicates that the cost of applying water by sprinkler in that state is approximately $3.50 to $4 per acre inch, when all costs are calculated.

I am of the opinion that gravity irrigation has a much more universal application in the East and South than is generally supposed. People in these areas visualize gravity irrigation as requiring great quantities of water spread in wild profusion all over the land surface. With proper design and proper land preparation, gravity irrigation may be as economical of water as sprinkler irrigation and even more so under many conditions. The amount of labor required may be only a small fraction of that required for sprinkler irrigation.

The great difficulties now facing gravity irrigation are the facts that it has few salesmen, and many engineers do not have the faintest notion of how to design such a system or to use it after it is designed. The invention and development of large land leveling equipment have completely changed the picture in many areas. Near where I operate land in Nebraska, it is fairly common practice to remove the top soil, stockpile it, level the land, and replace the top-soil, with a cost still less than that of some commercial type systems. Instead of using unsightly and wasteful irrigation ditches, gated surface pipe is recommended for many central, eastern, and southern areas. This pipe is light, is manufactured in 20-foot sections with quick coupling joints, and can be placed in position quickly. If irrigation is not needed, the pipe can be conveniently stored. If irrigation is needed quickly, it can be placed in operation in a matter of two or three hours. The gates can be opened and water supplied to each row of cotton, or the pipe may be used for conducting large quantities of water for the irrigation of pasture or close growing crops.

• **The Land**—The best results can usually be accomplished when the entire farm unit is taken into consideration for irrigation planning. Irrigation introduces new crops, new practices, new work schedules—all of these need to be considered and a careful conservation plan made if the irrigation farmer is to succeed. It is often essential to get water off the land as well as on and, therefore, drainage must be provided—sometimes surface and sometimes underground. If gravity irrigation is to be attempted, land preparation is usually essential. The land surface may have to be reshaped so that application can be made efficiently and with the best results. The dire results which were predicted in Western States when land preparation was first started have seldom developed. Agronomists have come forth with soil treatments which soon have the cut sections in production. In many areas, top-soil is being replaced where deep cuts have been made.

It is common practice now to remove as much slope as possible in order that water may be applied without erosion. Skillful design will often permit a single ditch to be used for drainage and irrigation, depending on conditions at various seasons of the year.

A carefully made soils map, a topographic map, and a good land use plan are fundamental essentials, it seems to me, before too much money is invested in an irrigation venture.

Probably one of the greatest problems which will be encountered by Eastern and Southern irrigators will be the tendency on the part of farmers to wait too long before applying water. This is true even in old Western irrigated areas. Usually the successful irrigator checks the subsoil and begins applying water before the crop is actually in need. It should be remembered that six or seven acres a day is good coverage with irrigation water and part of the crop may be burned up, or at least severely damaged, before it is reached.

Need for Research, by John R. Carreker, Athens, Ga., Agricultural Engineer, Division of Soil Management, Humid Regions, USDA

IRRIGATING COTTON in the humid South is a relatively new practice. There are many things we don't know about it. Following are some of the major questions which need fuller answers:

1. What are the costs of and benefits from cotton irrigation?

W. P. Law, Jr., agricultural engineer, Clemson College, Clemson, S.C., reported that in 1953 two irrigations totaling 2.6 inches increased the seed cotton yield 655 pounds over the unirrigated cotton. The fiber length was 31/32 inch not irrigated, and 1 1/32 inch irrigated. The staple length alone increased the value of the cotton more than the cost for labor and fuel for applying the water. A survey by Law in 1952 showed that operating costs for sprinkler irrigation were about $2 per acre inch of water applied. Overhead costs for interest, depreciation and repairs were from $6 to $18 per acre per year for the sprinkler equipment and power unit. This is good data, but there's not enough of it. Many more research studies are needed to permit reliable answers to questions on the costs and returns from cotton irrigation under all sorts of conditions.

2. What are the optimum moisture requirements of cotton?

How much water does cotton need? How often should it be applied? How fast can it be put on the land? These questions are basic in an irrigation program for any crop. A lot of research information is needed to answer them. The answers are not available. Some work is now under way at a few locations.

How much water is available to plants in a given soil? We call that the available water capacity (A.W.C.) of the soil. How fast is water lost out of the soil by evaporation and transpiration? We call that the evapotranspiration or consumptive use rate. How fast can water be applied to a soil without runoff occurring? That is governed by the infiltration rate of the soil.

A limited amount of information is available on these soil properties, but we need much more.

The amount of water stored in the soil, the rate it is used out, and the rate it can be returned all affect the design, cost and use of irrigation systems. Sandy soils hold less water than clay soils. Irrigation applications are less at a time and more frequent on sandy soil than on clay soil. Large plants in hot weather use water faster than small plants or those growing in cooler weather. Crusted or tight soils take in water more slowly than a porous soil. Water must be applied at a slower rate when the infiltration is slow, thereby

C. HAMILTON MOSES, chairman of the board, Arkansas Power and Light Co., Little Rock, made the principal talk at the banquet Thursday night.

increasing the time irrigation equipment must run at one setting.

These basic soil-plant-moisture relationships need to be determined for every major soil type in the cotton producing area of the nation.

3. How will irrigation affect other production practices?

Limited data show that when moisture is plentiful all season, cotton makes better use of the available nutrient supply. Then what is the optimum fertility level when moisture is not a limiting factor? We don't know. We are sure it is higher than the levels presently recommended. Irrigation and fertilization studies are needed throughout the Cotton Belt.

How do optimum moisture and fertility levels affect other production practices such as cultivation and insect and disease control? Research data and experience are needed to answer such questions.

4. How can one tell when it is time to apply irrigation water?

More farmers who own irrigation systems have asked me that question than any other single one. The correct answer should be, "Begin in time so that all the field is covered before the available soil moisture is completely used up." That means one must know how much moisture is available in the soil at all times.

Instruments are available that indicate the supply of available moisture in the soil at any time. One type is called the tensiometer. Another measures the resistance to the flow of electricity as an indicator of moisture conditions. Both require some skill on the part of the user.

A crude but practical method is to observe and feel the soil. Experience will indicate the relative amount of moisture.

Other methods utilize a system of bookkeeping. The available moisture is decreased from day to day by estimated amounts according to the stage of crop growth, atmospheric conditions and other factors, while rainfall and irrigation add to the supply.

With all these methods, data are needed on the daily use rates of moisture by the plants, the water holding properties

of the soil, and other such factors.

5. How much water is needed?

The amount of irrigation water needed will vary from year to year and one location to another according to the rainfall pattern. Experience over a number of years should give an indication of the water requirements.

There is an abundant supply of water for cotton irrigation all over the humid belt. These water resources are largely undeveloped, however. The oversupply at some seasons needs to be conserved for use during periods of stress.

Research data are needed on the best ways of conserving the available supply for use at a later date.

6. What method of application or type of equipment works best for irrigating cotton?

The choice of method, type of sprinklers, power unit or other equipment should be based on economy and convenience of operation. And here again research information is lacking. We do not have enough information to advise farmers adequately on the most economical and most convenient method of irrigating cotton.

There is also a need for less expensive irrigation equipment. The manufacturers have a major responsibility for reducing costs of production and marketing so that farmers can buy irrigation equipment with considerably less capital outlay than is now required. This can be done through continued research in industry.

Services of the Irrigation Industry, by Dan Howell, Memphis, Choctaw, Inc.

THE IRRIGATION INDUSTRY has done much to further the idea of supplemental irrigation, but since it is still comparatively new in this section of our country, the majority of prospective owners of irrigation systems know very little of the complex factors involved in designing a system to achieve their particular objectives.

The irrigation industry is therefore faced with the responsibility of designing systems that will give maximum efficiency at the lowest possible expense to the prospect. In doing this, we have to provide a large number of services to the farmer.

First, we have to make sure that there is adequate water available for a full irrigation season. Water is available from many surface sources such as flowing streams, lakes and ponds.

The use of wells as a source of water is accepted in some areas, but in others it is advisable to have an analysis made to determine whether or not prolonged use of this water would have ill effects on the soil or crop. In some areas, lakes and streams are contaminated by industrial wastes. The legal aspects of pumping water from wells or streams should be explained to the prospective purchaser of an irrigation system. In areas where there are no laws governing the take from a stream, the buyer should be reminded of possible competition upstream which may affect his source of water. The industry representative realizes the general tendency to underestimate the quantity of water required for an irrigation season, and should be prepared to analyze carefully the water source with the prospect.

The second service of the representative is to recommend the type system best suited for the areas to be irrigated. After consideration of the many variables involved, a decision to use furrow, flood or sprinkler irrigation should be given, keeping in mind that the proper type system should give the prospect maximum effectiveness for his money.

Next service is determining the rate of application. The water should be applied only as fast as the soil will absorb it. The industry representative should determine soil type, grade and type of crop, to determine rate of application: the lower the holding capacity of the soil—the faster the infiltration rate; the higher the holding capacity of the soil—the slower the infiltration rate. A uniform application of water with a minimum of runoff and evaporation loss is the desired objective.

Plant feeder roots will vary in depth from less than one foot to three or four feet. The depth to which the plant feeder roots will penetrate is the depth to which a plant will feed. It is obviously unnecessary to irrigate beyond the root depths of the plant. It must be remembered that the water, when applied to the soil, does not seep down through the soil until it has reached the saturation point. Then, and only then, will the soil release water through the pull of gravity, to the lower levels. The irrigation engineer or representative should advise the correct depths for the various crops to be irrigated.

Before a sprinkler system can be properly designed it is necessary that the difference in elevation in water supply and areas to be irrigated be determined. It is my opinion that this service should be furnished by the industry.

One of the most important preliminary design factors for a sprinkler system is to consider the direction of the prevailing winds. If possible the laterals should run across the wind. The representative should also advise the buyer how to compensate for winds higher than six miles per hour.

The pump is the heart of the irrigation system and it is therefore most important that the respresentative recommend a unit that will meet the requirements of the particular irrigation system to be installed. Allowances must be made if the purchaser is considering additions to his original system. Self-contained, portable pumps and power units are available, but in many cases it is more economical to use a farm tractor or other unit that is available and can be coupled to the proper size pump.

Fuel costs for operating the pumping unit must be considered. In many areas the cost of fuels will vary to the extent that the use of one fuel, or electricity, over another, will amount to considerable saving over a year's pumping season. The representative should be familiar with this variation by areas and so advise the buyer.

The representative, after making a survey of the area to be irrigated, should be in a position to furnish the buyer with a detailed, scaled plan of the proposed system showing main line and lateral placement and size, spacing of sprinklers on laterals, movement of laterals on the main line, pumping rate and pressure, application rate, and rate of coverage for a specific design area serving specific crops and crop acreage.

The representative assuming responsibility for the installation of the system should furnish warranties covering quality and workmanship of the equipment which the manufacturers guarantee, and provide for replacement of defective parts which fail because of poor quality or workmanship.

The representative should maintain an inventory of replacement parts and required equipment for repair service. The extent of this available service should be such that users in the territory would be assured of reasonable service which would avoid loss due to shutdown of a system for replacement parts or repairs.

The representative should supervise the installation and operation of the system until the buyer or his operator is familiar with the operation and maintenance of the pump and proper movement of the laterals.

Soil moisture should be checked both before and after irrigation. The representative should show the buyer whether or not the wilting point has been reached or whether or not moisture should be added; also, how to check to determine if the soil has been saturated to the bottom of the root zone.

The representative should make at least two inspections each year to determine if the buyer is using the equipment to his best advantage and if the equipment is performing according to specifications.

Water Rights, by Wells A. Hutchins, Berkeley, Calif., Principal Irrigation Economist, Production Economics Research Branch, ARS, USDA

THE TWO BASIC—and conflicting—principles governing rights to the use of water of watercourses are the riparian doctrine and the appropriation doctrine.

The **riparian doctrine** recognizes in the owner of land contiguous to a natural stream or lake certain rights in the use of the water. He has, under certain circumstances, the right to use the stream for floating logs, boating, recreation, and other purposes. He may use as much of the water as he needs for domestic purposes. For irrigation, his use must be reasonable in relation to the uses of all other riparian owners. The use of water is limited to riparian land. There is no priority among riparian owners based upon the time of beginning use of the water. The riparian right is not lost solely by nonuse, but it can be lost by prescription.

The **appropriation doctrine** recognizes rights to use water based solely upon priority in the time of acquiring the right. The first person who diverts and puts to beneficial use a specific quantity of water has the right to continue doing so without interference from later appropriators. Each appropriative right is superior to all later ones and inferior to all earlier ones. Water may be appropriated for any beneficial use upon any land, regardless of its contiguity to any stream. The right can be lost by abandonment, forfeiture, prescription, or estoppel.

The courts in various decisions have acknowledged that the owner of land on which **diffused surface waters** occur may capture them for consumptive use on his land. Few, if any, decisions have held either that the land owner may or that he may not withhold diffused surface water that otherwise would flow to a stream on which appropriative rights have been established.

Waters of definite underground streams are subject to the law of watercourses. Other **ground waters**, commonly known as percolating waters, are subject to several different principles:

The **doctrine of absolute ownership** recognizes the right of the overlying land

owner to pump the water at any time or in any quantity, regardless of the effect upon his neighbors' water supply.

The **doctrines of reasonable use** and of **correlative rights** restrict the land owner's use to reasonableness in relation to the reasonable needs of other land owners.

The **doctrine of appropriation** is analogous to the appropriation doctrine of surface streams.

• **Need for Adequate Laws**—So long as water supplies are ample for the requirements of all who desire them, the need for water rights laws is not pressing. It is when the demands exceed the available supply, and some or all water users cannot have enough, that the problem of division of the water arises. Who, then, are to be the favored ones? Or must everybody be rationed, and nobody have a full supply?

Shortage of water supply may occur in a valley generally considered to be well watered. Even if the aggregate quantities of water consumed in domestic and irrigation uses remain fairly constant over the years, deficiencies in normal rainfall may cause inadequate stream flow. Shortages may result also from increases in consumptive uses of water. Lack of precipitation itself may bring increases in demands for irrigation, thus advancing the time of inadequate flow. A parallel stringency may result in the lowering of ground water levels and increasing cost of pumping.

Unless a system of water rights laws adequate for the protection of water rights is in effect when a shortage occurs, uncertainty as to rights and remedies prevails. Those closest to the source of supply may get the lion's share. Lawsuits between two parties, or at the most a mere handful, may be argued and decided without consideration of sound water policies. Out of this may come declarations of water rights principles of statewide application. Perhaps these principles may prove conducive to the public welfare. Perhaps, on the contrary, they may be such as to cause serious difficulties in solving water problems later.

Assuming that the water supplies of an area, even though now ample, will not remain so indefinitely, the time will come when adequate water rights laws will be needed. They are needed now in various areas. They are—or will—be needed for the purpose of declaring water rights principles that will help to effectuate the best utilization of the state's water resources.

• **Essential Features**—An adequate water rights law will define vested water rights, will limit the extent to which they may be exercised, will disclaim any intent to infringe them, and will provide for their protection. This will apply not only to consumptive uses of water, but also to long standing and well recognized uses of stream channels and flows for other purposes.

A state water agency will be created, and provision will be made for recording all vested rights.

Waters of natural sources in excess of the quantities required for pre-existing rights will be declared to be public waters of the state, subject to appropriation for beneficial purposes. No appropriation of water will be valid unless made according to the procedure set out in the statute.

Procedure will be provided for determining all water rights that attach to a stream system. All claimants will be made parties, and all existing rights will be adjudicated. The state water agency will participate in the findings of fact, but the final step will be a court judgment and decree.

Water rights will be administered by the state water agency, and the water will be distributed in accordance with individual rights of use.

The water rights statute will preferably apply to all waters—watercourses, diffused surface waters, and percolating ground waters. This is because rights of use may be claimed with respect to waters of all these classes, and also because of the interdependence of surface and ground water supplies and the desirability of working out their relationships in given areas.

Heard at Little Rock

MECHANIZATION PROGRESSES

■ HERE ARE some brief comments taken from papers and discussions at the eighth Beltwide Cotton Mechanization Conference held July 28-29-30.

MORE THAN SUBSTITUTION—" . . . Mechanization involves far more than the mere substitution of machines for human labor. . . . It also involves plant breeders, processors, and others. . . . Mechanization, in fact has become a shorthand term for mechanical, chemical, and biological improvements which must be associated together."—O. V. Wells, Washington, Administrator, Agricultural Marketing Service, USDA.

SAVE EXCESS WATER—"There is an abundant supply of water for cotton irrigation all over the humid belt. These water resources are largely undeveloped, however. The oversupply . . . needs to be conserved for use during periods of stress."—John R. Carreker, Athens, Ga., Agricultural Engineer, Division of Soil Management, Humid Regions, USDA.

REAL STAKE IN IRRIGATION—". . . Cottonseed processors have a stake in cotton irrigation. Cotton grown under favorable moisture conditions seems to carry a higher fat and oil content in the seed and a lower protein content." —W. P. Law, Jr., Clemson, Associate Agricultural Engineer, South Carolina Experiment Station.

SUPPLEMENTAL IRRIGATION—"Supplemental irrigation is a means of protecting investment by reducing or eliminating the hazard of drouth. . . . It is a means of obtaining high and stable yields year after year. . . ."—Joe C. Hardin, Grady, President, Arkansas Farm Bureau Federation.

LARGE FARMS NEEDED—". . . For profitable cotton irrigation, a grower will need a unit of 300 or more acres of cropland—with at least 100 acres in cotton. Certainly the operator will need a high degree of managerial ability and access to the necessary capital."—John W. White, Fayetteville, Associate Director, Arkansas Experiment Station.

DISEASE CONTROL PROGRESS—". . . Significant progress has been made (in disease control work). . . . More progress has been made than is being fully utilized. . . . Effective seed treatments for seed-borne diseases and damping off of seedlings have been available for years. But still no more than two-thirds of the planting seed are properly treated each year, and seedling diseases still hold top rank among cotton disease losses."—H. G. Johnston, Memphis, Production and Marketing Division, National Cotton Council.

WEED CONTROL PROGRESS—". . . The roughest part of the road (in mechanical weed control) is behind us and . . . the sharp turns have been rounded out and made into graded curves. The road ahead will be smoother." —Fred C. Elliott, College Station, Cotton Work Specialist, Texas Extension Service.

CREDIT NEEDS CHANGE—"American agriculture . . . is constantly changing. Consequently, the credit needs of farmers also change from time to time. . . . Institutions extending credit to farmers have a challenge to keep pace and change their methods with the changing times."—Robert B. Tootell, Washington, Governor, Farm Credit Administration.

FIRST STEPS NEED HELP—"We have found . . . that it is very important to help . . . operators of small farms to take the first steps in mechanization. . . . Many such farmers on small acreages, starting with small machines bought with borrowed money right after the war, are now owners of substantial acreages and are farming on a larger scale because they were able to obtain the equipment and the credit they needed."—F. W. Jenks, Chicago, Vice-President, International Harvester Co.

QUESTIONS FOR FUTURE—"Mechanization offers a wide range of tools and techniques which have enabled many to break through the low economic ceiling associated with a man, a mule and a small patch of land. . . . However, I have serious questions about where we might be in 1975. . . . Are we on a 'high enough road' so that comparable incomes and efficiencies will be a reality? . . . I wonder if the research and education programs of private and public groups are **bold** enough—and especially if they are **basic** enough—to bring this about."—C. R. Sayre, Scott, Miss., President, Delta & Pine Land Co.

O. I. SEALE

ROBERT HORTON

Horton and Seale Are Promoted

WESTERN COTTONOIL CO. at Abilene has announced the promotion of Robert Horton to general manager of the crop loan department and administrative assistant to Ben Barbee, general manager, and W. D. Watkins, assistant general manager. Horton, who was formerly general manager of gins, has been succeeded in that position by O. I. Seale. The new gin manager moved from Memphis, Texas, where he was northern district manager for the company, to Abilene.

Effects of Irrigation on Yield and Fiber Quality, by W. P. Law, Jr., Clemson, Associate Agricultural Engineer, South Carolina Experiment Station

A SURVEY made late in 1952, covering South Carolina and neighboring states, indicated that yield increases from irrigation varied from zero to 1.3 bales per acre, with an average increase of approximately a half-bale.

Further evidence of irrigation's effects on yield—and on fiber quality—was obtained in 1953 at Clemson by the South Carolina Experiment Station. The yield increase was highly profitable; the irrigated cotton made far less second growth after defoliation than the unirrigated (an advantage to those who pick with machines); the irrigated cotton was defoliated as successfully as the unirrigated; and irrigation did not hamper insect or weed control practices. Results of the 1953 Clemson test are tabulated below.

It should be noted that the single irrigation made late in the fruiting period resulted in a comparatively small yield increase, which indicates the value of the earlier irrigations.

Notice that the fiber strength was reduced in proportion to the amount of irrigation. However, uniformity of fiber length and fineness of the fiber were not significantly affected.

Apparently, cottonseed processors have a stake in cotton irrigation. Cotton grown under favorable moisture conditions seems to carry a higher fat and oil content in the seed and a lower protein content. Each of these qualities was affected in proportion to the amount of water applied.

Since one year's test is not generally considered adequate for drawing conclusions, it should be pointed out that the results set forth in this paper are substantially the same as have been obtained in tests elsewhere.

Irrigation Treatment	Number of Irrigations	Total Amount of Irrigation	Yield of Seed Cotton, Lb./Acre	Increase Over MO Lb./Acre
Not Irrigated (MO)	0	0	1560	—
Irrigated to Prevent (M2) Wilting in late fruiting period	1	1.2"	1860	300
Irrigated when wilting Before Noon (M1)	2	2.6"	2215	655
Irrigated to Prevent Wilting at any Time (M3)	3	3.8"	2150	590
			LSD 5%	209

Irrigation Treatment	Staple Length	Grade	Percent Picked First Picking	Bolls per Lb. of Seed Cotton	Ginning Percentage
M0	31/32"	Middling	62.8	79.8	39.5
M2	1"	Middling	55.3	77.1	39.5
M1	1 1/32"	Middling	56.6	74.8	38.0
M3	1 1/32"	Middling	44.6	74.6	37.5

Irrigation Treatment	Av. Fiber Length (Fibrograph) Inches	Av. Fiber Strength (Pressley) Lb. per Sq. In.	Seed	
			Percent Fat & Oil	Percent Crude Protein
M0	.844	82,000	23.80	26.94
M2	.858	81,000	25.50	27.38
M1	.884	76,000	25.79	26.50
M3	.900	74,000	27.02	24.44

Cost and Management Problems, by John W. White, Fayetteville, Associate Director, Arkansas Experiment Station

I SUSPECT that for profitable cotton irrigation, a grower will need a unit of 300 or more acres of cropland—with at least 100 acres in cotton. Certainly the operator will need a high degree of managerial ability and access to the necessary capital to fully equip and operate the farm.

Good management will play a dominant role. For example, let us assume the operator gets a perfect instrument for the determination of soil moisture and time of applications. He decides to irrigate. Then, through some quirk, he gets an unpredicted two-inch rain. Here good drainage most come into play or the irrigation will do more harm than good. The manager must be "on his toes" to handle the situation.

From the standpoint of costs or capital outlay, the necessary added investment in an irrigation system is a big stumbling block or drawback to the irrigation of cotton.

The economists on our staff tell me that the investment or "inventory" cost for an irrigation system for 100 acres, exclusive of land preparation, will run about $76 per acre for a sprinkler system using well water and electric motor, and about $44 for free surface water. In the case of the furrow or flush system, the investment cost for wells would be $40 per acre and for free surface water $27. I doubt if there are many cases where we would have free surface water. Also, the "furrow or flush" system for cotton production has limited application. Thus, we might conclude that cost will tend to be around a minimum of about $76 per acre for a system designed to handle 100 acres. Obviously, any good manager planning irrigation will spend a considerable sum per acre for land preparation. However, the cost of land preparation can perhaps be justified on other grounds. It merely becomes a necessity when one irrigates.

Let us now take a look at the complete picture of costs and returns of cotton irrigation in a situation which I believe is typical. To do this it is necessary to make certain assumptions. These assumptions are:

1. Irrigation will, on the average, increase yields 200 pounds of lint and 344 pounds of seed per acre.
2. Price and cost rates:
   a. Lint cotton at 33 cents per pound.
   b. Seed at $50 per ton.
   c. Harvesting cost $3.25 per hundred weight.
   d. Ginning cost $13 per bale.
   e. Seed cotton per bale 1,360 pounds.
   f. Labor cost per acre for irrigation one to 1½ hours per application. Thus, for fuel engine $3 and for electric motor $2.
3. Good fertilizer, disease and insect control practices will be used.
4. The irrigation system, used at near maximum capacity, will handle 100 acres.

We have two sets of data for different periods pertaining to the irrigation of cotton in humid regions. The first period was 1941-43. In the experiments no fertilizers of any kind were applied in any year. Tests were conduct-

ed on soils better adapted to rice than cotton. In 1941 the rainfall was adequate to maintain moisture at desired levels until the last of August, at which time the cotton was irrigated. On Sept. 12 the crop received another irrigation but by this time the cotton was fairly well matured. Thus, in the first year, irrigation increased the average yield of seed cotton only 158 pounds.

In 1942, four irrigations were necessary since the rainfall was not as well distributed as in 1941. However, rainfall was sufficient after July 30 to keep soil moisture above the desired levels until Sept. 4 when it was necessary to irrigate again. Average increase in yield per acre for this year was 207 pounds of seed cotton.

In 1943, moisture for crop production was very inadequate and frequent irrigation was necessary. Seven irrigations increased seed cotton yields by an average of 706 pounds.

Over-all average increase in yield for the three years was 357 pounds of seed cotton. Net returns from irrigation ranged from $18.02 per acre using sprinkler system, well water and a fuel engine up to $29.52 per acre using the furrow or flush system with free surface water and an electric motor.

Our second set of data covers the four-year period from 1950 to 1953, when tests were conducted at the Cotton Branch Experiment Station in Arkansas. The rainfall pattern for the two years 1950-51 was fairly representative of a "normal" year in which the rainfall is relatively well distributed. In 1952, the rainfall was less well distributed, also there was less cumulative rainfall. In 1953, there was relatively more cumulative rainfall but the distribution was bad, the majority coming in May and very little from then until the end of the growing season.

The rate of fertilizer application on this experiment was 800 pounds of 10-10-10 per acre per year. This rate was determined by experiments conducted in 1950 at the Marianna station in which 400 pounds, 800 pounds, 1,200 pounds and 2,400 pounds of 6-8-12—plus 32 pounds of nitrogen as a side-dressing—were applied per acre. The 800-pound level of application gave the maximum total physical returns in terms of cotton yield.

Thus, under the above conditions in which management practices were at/or near the optimum, including fertilization, drainage, cultivation, insect and disease control, timeliness of water application, etc., the average increase in yield of lint cotton was 204 pounds. The effect of **irrigation water alone** on yields were not determined by the experiment. That is, there could have possibly been some complementary effects between water and fertilizer which tended to distort the effects of water alone on the yield of cotton.

The added cost brought on by irrigation, including harvesting and ginning of the additional yield, ranged from $29.75 per acre using furrow or flush, free surface water, and electric motor (not including land leveling cost) to $41.25 using sprinkler system, well water, and fuel motor. Increased net returns per acre ranged from a high of $44.85 using furrow or flush, free surface water, and electric motor down to $33.35 per acre with sprinkler system, well water, and fuel motor.

By assuming a 200-pound yield level and the use of a sprinkler system, well water and an electric motor, lint cotton prices could drop to 17.78 cents per pound before irrigation of cotton would cease to be profitable.

Irrigation and Other Practices, by James L. Gattis, Little Rock, Agricultural Engineer, Arkansas Extension Service

IRRIGATION HAS an effect on—and goes hand in hand with—many other practices in cotton production.

Fertilization for example, is necessary for best results from irrigation. The availability of irrigation water makes it possible for a farmer to fertilize his land as soil tests indicate, without the hazard of not getting benefits from the plant food because of drouths. At the present time the general recommendation for fertilizer under irrigation in this area is about one and one-half times the recommendation for fertilization where irrigation is not planned. It is even more important where irrigation is used to have soils analyzed and keep a proper balance of plant food elements. For example, in 1953 I saw a field of irrigated cotton in Lonoke County in which side-dressing was omitted on a few rows and the yield was reduced one-quarter bale per acre.

There has been some work of an exploratory nature in this area on the distribution of fertilizers through irrigation water. At present the distribution of nitrogen fertilizer through a sprinkler system appears to have more possibilities than the distribution of mixed fertilizers. An important reason for this is that irrigation is often needed at the time nitrogen side-dressing is done.

On the other hand, mixed fertilizers are normally put down prior to planting when irrigation is rarely needed. The use of anhydrous ammonia has increased in the area tremendously, but I do not know of successful distribution through irrigation water for cotton. Reports on its use in furrow irrigation indicate the problem of uneven distribution. Preliminary reports on applying anhydrous ammonia through sprinkler systems have been such as to discourage its use. Loss of 75 percent of the anhydrous ammonia through a sprinkler system has been reported by the University of Georgia. Burning of plants has also been reported. However, the agronomists tell us that if diluted enough in the water, anhydrous ammonia should not cause burning. In my opinion further research is needed to determine the feasibility of using anhydrous ammonia in the irrigation water by both furrow and sprinkler systems.

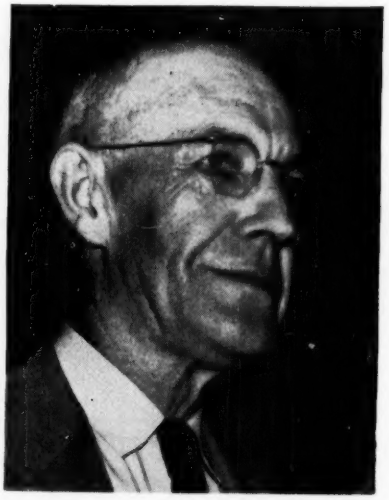
Normally there is enough moisture at planting time to get cotton up. However, on some soils supplemental moisture has been needed three or four times out of the past 10 years to bring cotton up. Under these conditions irrigation is used to bring the cotton up after it is planted. The sprinkler system can be used to advantage for getting cotton up because it can put out light applications over a large area with less water than the surface system.

During the cultivation of the crop, irrigation structures, when not properly planned, can create a problem. Many of the canals used to carry water are far larger than needed; they waste water, grow up in weeds and grass, provide an insect haven, and waste valuable land. To irrigate from some of these canals, smaller secondary head ditches are required which take another strip of land out of production. Then a turnrow out in the field wastes another strip.

However, before recommending a certain type of canal or head ditch I would suggest knowing the equipment which will do that job. To illustrate I will cite a personal experience right here in Pulaski County. Back in 1950, a farmer planned to try out irrigation on 10 acres of cotton and 15 acres of corn as a demonstration. The county agent and I assisted in setting up the demonstration. We located the high point and located and staked the place for the canals before the crop was planted. The last week in June it was getting a little dry so I went out with the county agent to see how the crop was holding up. We dug into the root zone and found the moisture getting low and suggested that irrigation be started the next week if it didn't rain. The farmer asked me to demonstrate how to build the head ditch to irrigate from. The most likely piece of equipment he had was a tow-type road grader with about a 12-foot blade. With a large wheel tractor as power we started the head ditch. The result was a ditch 10 feet wide from which to furrow irrigate. Although the ditch was photogenic enough to make the cover of a farm magazine and the irrigation produced good yields of both cotton and corn, I learned that good irrigation head ditches couldn't be put up without the proper equipment. Small lined canals and temporary head ditches require a machine, now available, which can do the job quickly and economically.

In areas where land is higher priced, the underground pipe system of conveying irrigation water is the answer. The furrows for conveying the water down the rows differ so little from those resulting from normal cultivation that they should pose no problem in mechanical harvesting. The sprinkler systems offer no obstacle to cultivation.

Drainage must be provided where irrigation is used. The way some fields are drained today does pose a problem for gravity or furrow irrigation. The person who plans a gravity - type system must be aware of the drainage problems and requirements of the area.



R. FLAKE SHAW, Greensboro, N.C., is chairman of the Council's Cotton Mechanization Conference Steering Committee and was program chairman for the Conference. He is president of the North Carolina Farm Bureau Federation.

Insect control is an ever-present problem to the cotton producer whether he irrigates or not. However, when more cotton bolls are put on by irrigation, it really puts emphasis on preventing insect damage. Last summer, on a trip to southeast Arkansas just at picking time, we visited a farmer who had done a fine job irrigating. He timed his irrigations to get best results during the fruiting stage of the plants and put on enough water to bring the soil up to field capacity. But he stopped dusting boll weevils a little too soon and lost about one-quarter bale per acre of the top crop.

To me, under most conditions, irrigation looks conducive to mechanized harvesting. There appears to be more uniformity of the crop over the entire field. Also, the bolls are larger with fewer "knotty" bolls and a better distribution over the stalk. Too, cotton that is irrigated seems to be more readily defoliated, especially in dry years like 1952 and 1953.

Credit in Adjusting To Mechanization

Farm Machinery Industry's Viewpoint, by F. W. Jenks, Chicago, Vice-President, International Harvester Co.

IN UNDERTAKING to give the viewpoint of the farm equipment manufacturers on credit and cotton mechanization, I should first of all draw a distinction between the Western cotton growing area and the old, historical cotton country of the South and Southwest. The need for credit for cotton growers in the West for farm mechanization has been recognized generally by the local bankers, who have handled this financing almost entirely at the local level.

The Western growers are primarily operators of substantial acreages who got into cotton production on a big scale during a period of mechanization, when the cotton picker, especially, was being perfected commercially. This was also a period when cotton prices were high, the labor supply was low, and credit was not as great a problem as during normal years. The banks and the farmers grew into expanded acreages and mechanization together, and because of this situation, needed credit was supplied by local banks and other lending institutions with definite benefits to both.

The situation has been different in the historical cotton producing country of the South and Southwest, where financing of the mechanical production of cotton is still a major problem, especially for the numerous small and medium producers.

Here the solution has had to be evolutionary. Here the labor for handling the cotton crop from planting through picking has been available on the farms for generations, until quite recently.

Here the great majority of cotton growers have been producing on small acreages. Here the system of tenant farming has been in effect for generations, with its traditional method of tenant financing. Cotton production had become thoroughly integrated in a social and economic system not naturally susceptible to quick or drastic change.

But, beginning shortly before World War II, drastic and sudden changes of tremendous force began to have their impact upon cotton production in the South. Among these was the disintegration of the great labor force which historically had produced cotton. So a great many Southern and Southwestern cotton growers had no choice but to mechanize, and do it as fast as possible.

Growers, bankers, farm equipment dealers, and manufacturers were all confronted with the problem of credit for cotton mechanization so abruptly that there was no regional backlog of experience and practice to draw upon to fit the specific needs of that type of financing.

There had been a long-established system of crop production loans. These loans were made right after the farmer ran out of cash from his last year's crop. He used the money to live on until the new crop was harvested, to buy his seed and fertilizer, feed for his mules, and for other needs. Settlement was made from the proceeds of the crop. The operator kept whatever was left.

Such loans, of course, were for a single year's duration. They were not fitted to the needs of machinery purchases. Another type of capital requirements loan became necessary. James Bishop, Jr., of the Bank of Greensboro, N.C., has clearly defined this type of loan:

"In addition to the so-called 'production credit' for seed, feed, fertilizer, labor, and the like," he says, "farmers also need funds for capital purposes; that is, for buying work stock, beef cattle, dairy cows, and labor saving farm equipment, such as tractors, combines, balers, harvesters, milking machines, and for soil improvement, soil building, and conservation practices; for the purchase of additional land; for constructing new homes and buildings, and making alterations, additions, and repairs to existing structures; and for many other purposes."

Obviously, such loans should be made for longer periods than the crop production loans. Many bankers in the South say these farm - capital - needs loans should run from one to five years, depending upon the use to which the loan is put.

I can speak with some certainty and assurance about the experience of the farm equipment manufacturing industry with this type of intermediate-term loan for the purchase of farm equipment. Prior to World War II the equipment makers financed most of their own sales with an amazingly small loss experience. We found that the farmer is the best credit risk in the world.

Farm equipment to the farmer is like machine tools to the manufacturer. It can and does pay for itself in use. Both kinds of equipment have a high investment priority.

• **Long Production Cycle**—But while the farmer is a fine credit risk, as the farm equipment industry has known for a hundred years and bankers have now learned from solid experience, he does have a fairly long cycle of production. Therefore, he must be given credit in such manner as to allow and provide for that cycle.

The farmer's total yearly income is geared to his crop production and various other incomes. We learned that a long time ago in the farm equipment business. It therefore became a routine matter for us to build a sound credit sale on payments fitted to farm income.

This could only be accomplished through an individual approach to the farmer's incomes and obligations at the time of sale. The very essence of this method of financing was to protect the equity in the collateral machines sold, and also assess installments that the farmer was capable of paying over a reasonable period of time.

Some bankers and lending institutions in the South have attempted to handle the farmer's capital requirement loans in the same manner as they have long handled his crop production loans. Sometimes they have both been thrown into the same loan for a one-year period.

There were times when such loans did not work out well. When the loan could not be repaid at the end of the year, the note had to be renewed. This was not always a satisfactory experience either for the customer or the bank.

As many Southern bankers now agree, the most satisfactory experience is to be expected (1) where there has been a careful analysis of the purpose of the farmer's loan and (2) where it is then arranged and handled in accordance with that analysis.

For myself, I believe that the first requirement of a bank in sound farm financing is to have one or more men who are expert in their knowledge of farming in their respective communities. Such bankers not only can make much sounder loans, but they can render invaluable counseling service to farmers on their financial operations.

I cannot over-emphasize the importance of this specialized farm credit banking service. It is a "must" for a good and sound farm credit operation. And the bank does not have to be a large one to afford such service. Even in the smallest rural banks the head man himself can know enough about farming in his community to be a good farm loan officer.

The really tough remaining problem in farm mechanization in the South, and in the financing of such mechanization, is that of the smaller-size farms. I believe it is a fact that few large cotton producers in the South are having much difficulty in obtaining adequate financing. But it is a real problem for the small operator, for the banker to whom

Spinner-Breeder Dates Are Oct. 11-12-13

The eleventh Cotton Spinner-Breeder Conference will be held Oct. 11-12-13 at Greenville and Stoneville, Miss. Dates were announced at a meeting of the Delta Council advisory research committee held recently at Stoneville.

Theme to be stressed at the Conference is "potentials for greater efficiencies in the cotton industry," according to Delta Council.

Conference location alternates between grower and mill territories, and Delta Council representatives point out that attendance by Delta cotton planters, ginners and buyers will be emphasized this year, since the Conference is being staged in the heart of the Delta area.

Cotton breeders of the Delta will be hosts for the meeting.

he goes for a loan, for the manufacturer who builds farm equipment, and for the dealer who distributes it.

The equipment manufacturers have been trying to assist the operator of small Southern farms by designing smaller machines to fit their needs and their capabilities. Our company's Farmall Cub tractor, and its accompanying group of small, light tools, were designed especially with the small farms of the Southern States in mind.

• **First Steps Need Help** — We have found from long experience that it is very important to help these operators of small farms to take the first steps in mechanization. Many bankers also have had the same experience. Many such farmers on small acreages, starting with small machines bought with borrowed money right after the war, are now owners of substantial acreages and are farming on a larger scale because they were able to obtain the equipment and the credit they needed to get a start.

Thousands of tenant farmers in the South have become prosperous farm owners through that process. Without the credit they needed to get started, they would still be a tenant farmers. The many bankers who have helped such men can indeed have a sense of pride in what they have done.

It is possible for our industry to design many machines in sizes small enough to fit the financial capabilities of the operators of small farms. But it is not feasible in the case of some machines, particularly some harvesting machines. In such cases, therefore, encouragement needs to be given to dependable custom operators who buy these larger machines and hire out to other farmers to do their work. Many banks have found it profitable to finance such custom operators.

Such practice has been found to be better than the encouragement of farmers to go together as a group for the purchase of a single large machine. Too often such group purchases have not worked out well from a credit standpoint; it is human nature for each man in the group to want preference in the use of the machine and to look to the other fellow to make the payments when due.

There is sound reason to expect that many of these smaller farms in the South will survive the present trend toward consolidation of acreages because of the industrial employment of their owners. The large influx of new industries into the South since World War II has opened up millions of new industrial jobs. Consequently, many operators of small farms now work five days in nearby factories and farm in the evenings and on weekends. There are more such farmers growing cotton, apparently, than any other crop.

Obviously, such industrial workers and part-time farmers have a good credit rating because their factory incomes ofter exceed their farm incomes.

Adequate and proper financing is an absolute necessity for farm mechanization in the South, just as it has been in all other parts of the country.

And remember that if Southern agriculture is prosperous through mechanization, then Southern business and banking are certain to prosper.

• **Ways to Sound Finance**—So it seems to me that the need for adequate and proper financing of the mechanization of cotton production is readily apparent.

How can this financing be most intelligently given, from the standpoint of the farm equipment manufacturer?

In answer to that question, I offer the following 10 suggestions:

1. It is my belief that the primary responsibility of the farm equipment manufacturer is the production and distribution of machinery to serve the needs of all farmers, large and small; the natural channel for farm financing, including machinery needs, is through the local banks and other financing agencies. We are anxious to cooperate, but only when adequate financing service is not available do we feel that we should enter this field.

2. The banks and other lending agencies extending credit to cotton farmers should be fully informed about modern farming methods, and able to analyze farmers' needs and to counsel with them.

3. Loans to cotton farmers should be of two distinct types: (a) the crop production loan traditional in the South, and (b) loans to farmers for capital needs such as beef cattle, dairy cows, and labor saving farm equipment.

4. The farm equipment dealers are the natural sources through which good farm machinery loans can be made, and bankers and dealers should work closely together on their mutual problems in this field.

5. Interest rates on farm loans should be fair and in line with the rates charged on other loans of comparable nature.

6. Loan repayments should be scheduled so as to conform to the farmer's periods of income, thereby making possible the orderly payment of installments on their due dates from predetermined sources.

7. Before a loan is made, the lending agency should be familiar with the borrower's operations and his general efficiency in the use and care of machines.

8. There is a direct parallel between mechanization of farming and the interest of young people in agriculture as a career. The sound investment of credit in encouraging youth to stay on the farm is of great importance to the future of agriculture and our nation.

9. Consideration should be given by lending institutions to emergency and unforeseen conditions such as family misfortunes, floods, drouths, and other weather vagaries which make it hard for farmers to repay loans at stated intervals. No group of borrowers remembers such consideration longer with greater benefit to him who extends it, or has a longer memory for him who does not extend it.

10. The handling of farm credit must be consistent in every economic climate. Farmers need help and must have credit whether times are good or bad. Our experience with the farmer is that he is always a good risk in the eventual handling of his obligations.

Banker's Viewpoint, by W. F. Pierce, Dermott, Ark., Executive Vice-President, Dermott State Bank

I HAVE FOUND that very, very few farmers clear enough money in any one year to purchase a tractor and equipment. But many of them do clear enough to make a substantial payment.

Right there is where proper guidance enters the picture. The cost of tractors and their equipment is almost beyond the comprehension of the average mule farmer, so it is very easy for him to overestimate his ability to repay. The maturity of these loans is of great consequence, lest we saddle him with a load he cannot bear. A study of his expenditures and earnings for a few years past will generally reveal about how much he will be able to repay each year. Using this information as a yardstick, the banker can form a general idea as to whether the farmer can repay the equipment loan within a safe period of time; that is, if his down payment plus his annual repayments will leave the farmer a safe equity in the equipment should he have to resort to a forced liquidation.

In this connection it seems to me that while the farmer can overestimate his ability to repay the equipment loan, the banker can also underestimate his ability to do so. May I elaborate? We bankers rely largely upon three factors when passing upon loans: (1) personal integrity; (2) earning capacity; and (3) collateral. Now let's take a look and see how mechanization is affected by these three factors.

• **Earning Power**—I believe that many lending agencies completely overlook the

Boys Tour Stoneville Laboratory

SHOWN HERE is the group of Oklahoma 4-H Club and FFA boys, their sponsors, instructors and others who recently made a tour of the Mississippi Delta. This picture was made at the U.S. Cotton Ginning Laboratory, Stoneville, Miss., one of the stops on the week's schedule. The trip was sponsored by the Oklahoma Cotton Research Foundation, and it was an award to the 10 boys for outstanding cotton production records. J. D. Fleming, Oklahoma City, secretary-treasurer of the Oklahoma ginners' and crushers' organizations, and George Stroup, Stillwater, Extension Service cotton specialist, were among those on the trip.

second of these factors—**earning capacity**. I have three farmers on one of my farms. One of them is a Negro whom we will call John. My main use for John is to have him available to help my wife or both of us in our yard, so I give him a small crop. He works this little crop with mules, more or less botches it in, digs the grass out by hand labor and poisons when I make him or hire it done for him. I cannot lend him very much because his **earning capacity** is so limited.

Then I have a white fellow who has no children at all to help him with the manual labor as John does, but who has two tractors with full equipment. I can lend him far more than I can John. Should he decide to buy another tractor or a picker he has a **basis for credit**, because in addition to **personal integrity** and **collateral** he also has **earning capacity**. I have two men who are using three or more tractors each, with no children to help them. But their **earning capacity** is such that they, too, have a basis for credit. I, therefore, repeat that while many farmers overestimate their ability to pay for mechanized equipment, so do many lenders underestimate their paying ability because they do not take into consideration their increased **earning capacity**.

The size of the farm unit in the South has been so much less than in the North, the West or the Middle West that there simply has not been enough acreage tilled by our people to give them the income to keep up with our neighbors. If mechanization increases the size of the farm unit, it will also increase the amount of money the farmer has to spend.

Now there is something else about this ability to pay. There is not a bank in the South that wants to lose a customer. I want to keep all of mine and to get some of my competitor's customers if I can. That being true, we need to take a long-range view of our over-all farming picture. Cotton is a credit crop and the purchase of equipment must be largely a credit proposition extending more than one year. As lending agents considering the credit needs of people whom we hope to keep for years and years as our customers, it behooves us to bear in mind the possibility of mechanization helping them to continue to increase their earning capacity.

• **Converting to Better Equipment** — There is another fact that we also need to keep in mind on this question of **need** for credit. This applies to the mule farmer who desires to convert. It applies to the average farmer who is in the process of conversion. It is also **applicable to the big farmer.** He, too, is in the conversion process. He is changing from two-row equipment to four-row equipment. He is buying expensive crawler tractors. He is buying new and modern accessories. He is buying land levelers, mechanical pickers and more and more equipment in this race to mechanize. You might be surprised to know that even the big man—the **planter**, if you please—uses a lot of credit facilities just the same as the little man. Offhand one might think that since he has more reserves, it is an easy task to meet his credit needs. This is not quite such a simple problem because cotton is a credit crop, and regular crop expenses sometimes exceed the legal lending limit of country banks. It then becomes necessary for the country bank to call upon the city bank for help, either in a participation loan, direct handling of the implement paper, or both.

Even with the larger farmers, the question of length of maturity enters into the picture. It is a short-sighted policy, and one that will invariably lead to revamping of loans, for the lending agency to require too large a repayment on loans of a capital structure nature from the current year's short term operating receipts.

Of course, it is very easy to run far into excess of our loan portfolio in this category. But in so far as compatible with sound banking principles and in keeping with our cash reserves, such loans are a source of good income. The bank can charge the farmer less than the average finance company and still have a profitable rate of interest. Then, too, there is the opportunity for community development as well as helping the individual farmer. I am thinking of one man who formerly rented his land to several mule farmers and that was the kind of job he got done—**mule farming.** We have assisted three of his better tenants, one Negro and two white men in the purchase of mechanized equipment. I wish you could have seen his land five years ago and then look at it today. Those three have money in the bank, they have money to spend with our merchants and the farm is now an inspiration to the community. These three men are considering the joint purchase of an anhydrous ammonia rig and a mechanical cotton picker.

We have another customer whom we we have helped purchase about eight tractors, two cotton pickers and an irrigation well. A few years ago he was working 320 acres of land and barely paying his crop loans. Today he is working 1,500 acres of land and is making enough money in addition to repaying his loan to buy more land.

In 1953 when we made a bumper cotton crop in our area we suddenly found that we had no labor to gather it, so our farmers had a **need for mechanical pickers** and a **further need for credit to buy them.** Not only our bank, but other banks in the area, financed our farmers and our implement dealers in the purchase and sale of about 110 mechanical pickers.

The crop was harvested in time to save the grade. And don't forget this: **They still have the pickers** for this year and subsequent years. Let me peck on wood—we have not yet had a single default on a picker installment.

One implement dealer who sold 61 pickers in 1953 tells me that he had only one default upon note installments due banks.

One furnish merchant and ginner tells me that he financed the down payment last year on several pickers and let his bank carry the balance. Only two men failed to meet their installment in full. The crop was harvested early and for much less then hand labor would have cost. Thus, the producers had more money to spend for other things.

Individual successes like these bring about a general upgrading of the financial, social and cultural levels of our communities. In short, **all** of us benefit.

Our bank realizes our farmers' **need** for credit. We are trying to meet that **need,** make it an **opportunity** for us to earn a reasonable profit upon our investment and, at the same time, fulfill an **obligation** in individual and community development.

Men Prefer Cotton For Shirts

Men prefer cotton shirts, and 50,000 bales more cotton were used in men's shirts in 1953 than in 1952, according to preliminary estimates of the National Cotton Council. Shirts consumed about 533,970 bales of lint last year.

That's only part of the story, the Council adds. Back in 1943, cotton had about 98 percent of the men's shirt market, chiefly dress shirts. During war years, rayon launched an all-out drive to capture the dress shirt market. Also, after VJ Day there was a strong shift to sport shirts. After rayon's efforts to capture the dress shirt market failed, rayon producers concentrated on sport shirts and appeared to succeed for three or four years. Cotton's share of the sport shirt market dropped 75 percent to about half of the total market.

By 1949, says the Council, research and advertising in behalf of cotton sport shirts began to show results. By 1952, cotton began making competitive strides. Last year, cotton had 61 percent of the masculine sport shirt market—which has grown from 3 million dozen in 1944 to 19 million dozen in 1953.

Thus, cotton has been able to maintain its position at or above the prewar level, despite a drop in dress shirt production from over 14 million dozen annually in 1939 to about 8 million dozen last year.

Farm Credit Administration's Viewpoint, by Robert B. Tootell, Washington, Governor, Farm Credit Administration

THE LENDING INSTITUTIONS under the supervision of the Farm Credit Administration have been financing a very considerable share of the investments in farm mechanization.

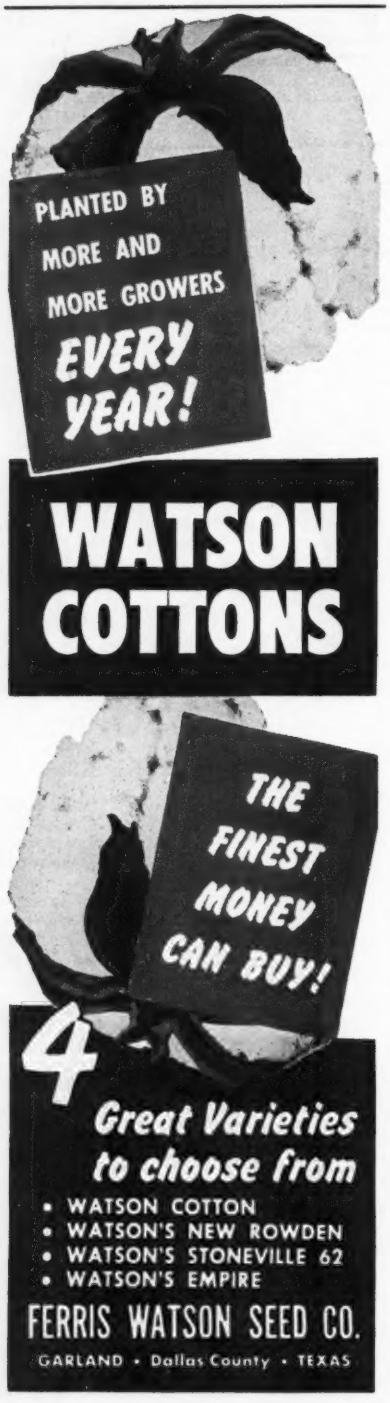
Such financing for individual farmers is furnished through three credit systems—the federal land banks, the production credit system, and the federal intermediate credit banks.

• **Long Term Credit** — As you know, long-term credit is furnished by the 12 federal land banks. The loans are made by the banks through the local national farm loan associations. The associations are cooperatively owned by the borrowers and the banks in turn are owned by the associations. All of the government capital which had been in the Federal Land Bank System was repaid in 1947 so that the banks are now fully owned by the users. The banks have a strong capital structure with a net worth of over $325 million.

Funds for making loans are obtained through the sale of consolidated federal land bank bonds in the general money market. Over their 37 years of operation, they have built up an excellent market for these bonds and thus are in a position to secure adequate funds for

meeting long term lending needs on a relatively low cost basis. At the present time, they are furnishing approximately 15 percent of all farm mortgage credit needs of farmers in the U.S.

In the Southern States, 70 to 80 percent of the number of all land bank loans are used in whole or in part to finance the purchase of land. Undoubtedly a part of this represents purchase to increase farm units to a more efficient size which will support mechanization, but we have no specific information on how much is used for that purpose.



In the Columbia and New Orleans banks, there is refinancing of short term debts in 45 percent of the loans. Some of that is machinery paper. In about 10 percent of the loans, a part of the proceeds is used directly to finance the purchase of machinery and equipment. To the extent that farmers need and can use long term real estate credit for financing mechanization, they can use federal land bank loans for that purpose.

• **Financing Machines** — In a recent questionnaire study, we summarized some information from reports received from the national farm loan associations in the four states of Arkansas, Alabama, Mississippi and Louisiana. This covered 60 associations and of this number 15 reported that the main purpose of all loan proceeds used to finance farm adjustments or improvements was mechanization. Another 31 associations reported that mechanization was second or third in importance after such purposes as livestock purchase and farm improvements.

Probably of greater importance in financing mechanization and other adjustments is the non-real estate credit available from the production credit associations and the federal intermediate credit banks. As I am sure you know, the production credit associations are local cooperative lending institutions with a membership made up entirely of borrowers.

Production credit associations were capitalized originally by government funds made available by the production Farm Credit Districts. This capital has been mostly repaid. On the first of July, credit corporations in each of the 12 of the 498 associations in the U.S., 356 were completely owned by the members and the remaining 142 associations had only about $4 million of government capital left. That is all that is left of $90 million of stock originally subscribed in production credit associations by the production credit corporations.

The production credit associations obtain loan funds by discounting farmers' notes with the federal intermediate credit banks. These are government-owned banks of discount, established in 1923, which obtain the loan funds they need by selling debentures in the general money market. Like the federal land banks, the federal intermediate credit banks have built up an excellent market for their securities and can obtain needed funds at very reasonable rates of interest. Their bonds and debentures carry no government guarantee whatever. As I mentioned, the federal intermediate credit banks are entirely owned by the federal government.

The Farm Credit Act of 1953, however, directed the Federal Farm Credit Board to develop ways of speeding up the repayment to the government of all its capital, not only in the federal intermediate credit banks but also in the production credit corporations and the banks for cooperatives. This is one of the important projects now before the newly created board and the entire Federal Farm Credit System. The purpose, of course, is ultimately to make the system completely owned by those who use it.

• **An Important Role**—The production credit associations and the federal intermediate credit banks are playing an important part in financing mechanization and other farming adjustments in the Cotton Belt. Our questionnaire survey showed that the production credit associations are familiar with the types of adjustment, including mechanization, taking place in their respective territories and are financing substantial amounts of the necessary investments.

It also points out that there is a need for both better information on costs and returns and a development of know-how on the part of the farmer in handling the new enterprises or methods of operation. Such information and know-how are essential to satisfactory financing of farming adjustments.

As I believe you know, it is the practice of production credit associations generally to write the notes for terms of one year. This is sometimes misunderstood. It gives the impression that the associations are not in a position to finance machinery and livestock purchases, which ordinarily require repayment periods longer than one year. When it appears that such investments can be made on a sound basis, the associations may and do make loans for such purposes. When necessary, they have an understanding with the borrower that the portion of his loan used for capital purposes which cannot be repaid at the end of the year may be carried over into the next year provided the farm plan is progressing satisfactorily.

The reason for an arrangement of this kind is that credit requirements change from year to year. Consequently, the most satisfactory plan is to review the situation at the beginning of each year and then set up a credit program adapted to the new year's requirement. Such a plan provides an opportunity for the association and the borrower to sit down and review the progress made during the past year, decide whether the plan is progressing satisfactorily, and then make any needed adjustments in the plan and in the line of credit for the next year that are appropriate under the circumstances. It also provides an opportunity for the association to assist the borrower in developing along sound lines. Often the farmer spreads repayment of the portion of his loan used for capital financing over a period of several years.

We do not have a complete breakdown of loan purposes which will indicate the extent of such capital financing by PCA's. In a cooperative study with Purdue University, however, an analysis of loans made in 1950 by five associations in various parts of the U.S. showed that 31 percent of the total amount of these loans was capital or improvement credit. The major share, or 50 percent, was for livestock purchase but the second most important purpose was machinery purchase with 22 percent.

The questionnaire study shows conclusively that PCA's provide substantial capital financing. A review of the replies from 36 associations in Arkansas, Alabama, Mississippi and Louisiana indicated 14 reporting that mechanization was the most important purpose of such capital financing, while 17 others reported that after purchase of cattle and other similar investments, mechanization was next in order of importance.

American agriculture is dynamic—it is constantly changing. Consequently, the credit needs of farmers also change from time to time. Institutions extending credit to farmers have a challenge to keep pace and to change their methods with the changing times. Local associations, the 12 district units and we

in the Farm Credit Administration in the Washington office are constantly endeavoring to make our credit services meet the needs of farmers.

The Challenge Ahead

■ *By C. R. Sayre, Scott, Miss., President, Delta & Pine Land Co.*

"COMPARABLE INCOMES" in cotton production and handling are the direct and indirect aims of us all. Our continuing challenges in cotton mechanization center upon the development of comparable efficiencies as the basis for comparable incomes.

This simply means that the cotton farmer with $50,000 in land and equipment should logically get a return about in line with what the same investment would yield in Midwest corn and hogs—or in a factory turning out industrial goods. Eventually, he must be able to pay his labor about as much as workers of equal skill are paid elsewhere in the economy. Then and only then will cotton be on a solid foundation of comparable efficiencies and comparable incomes.

Mechanization offers a wide range of tools and techniques which have enabled many to break through the low economic ceiling associated with a man, a mule and a small patch of land.

However, I have serious questions about where we might be in 1975. I wonder if we are on a "high enough road" so that comparable incomes and efficiencies will be a reality during the last quarter of this century. I wonder if the research and educational programs of private and public groups are **bold** enough—and especially if they are **basic** enough—to bring this about.

• **A Benchmark**—Just to establish a benchmark of sorts—to see where we are—let's take a look at what the economists would call "labor productivity" in cotton production. For our purposes, labor productivity can simply mean the quantity of goods or services resulting from a given amount of human exertion.

As recently as the 1930's, according to USDA, cotton growers were using roughly 250 hours of man labor to produce and harvest a bale of cotton. In other words, the physical productivity of the average family growing cotton was limited to about 10 bales. Even if the land and equipment and all else were free of any cash costs, it is obvious that such limited productivity for human effort would have kept cotton production on a pretty lowly rung of the economic ladder.

Again drawing on USDA, current physical productivity is roughly twice as high as it was in the thirties. The ceiling on the average family across the Cotton Belt has been raised to about 20 bales. Here in the Midsouth we can point to families which are well above this level. Some have hit levels of 50 bales per season.

• **But—Will the Hoe Go?**—Real progress! But sometimes it is difficult to realize the full potential of a specific new development. For example, a man with a one-row spindle picker can harvest four to five bales a day under reasonably good conditions in the Midsouth. The same man with a hoe might flat-weed three-fourths of an acre once over. With four times over for chopping and weeding, his "per day" productivity in weed control is equivalent to say 75 pounds of lint per day—or about three one-hundreths as much as in picking. In short, many farmers face a situation in which they can eliminate hand labor in harvesting, only to realize that they must keep a large complement of tenants to take care of chopping.

I shall not deal with the technical progress in weed control at this time. I think, however, that weed control research—particularly chemical and in part the mechanical phases—are good examples of too great dependence upon "cut and try" or "hope we'll hit it" research. Isn't it conceivable that we would have moved ahead farther, faster if we had adequate basic research to find out what goes on **inside** the cotton plant and **inside** the weeds we are trying to destroy? Why can't we put greater emphasis upon fundamental research in plant physiology? I find it hard to explain why we will make many types of field tests in the plant sciences year after year and dignify them with the term "applied research." Applied research should reflect the application of known scientific principles and facts. Yet we field test the "unknown" repeatedly and our prospects for getting results that can be systematically reproduced are no better than those of the alchemist prior to the development of quantitative chemistry.

It is most difficult to see how the chains which tie the hoe into cotton production can be broken without probing many, many more of the tediously long roads of fundamental plant research with intensities parallel to those now being used in cancer and polio investigations.

• **Another Look at Productivity**—There are no really satisfactory data for measuring our situation in cotton production in relation to other segments of agriculture and non-agricultural industries. However, some approximations developed by Dr. Earl Heady and his colleagues at Iowa State College from the last census of agriculture provide us with a rough insight. According to that study, the gross value of production on commercial cotton farms in the Delta amounted to little more than $1,900 per person employed. This was roughly half the average level for all commercial farms across the country; it was only 31 percent on the gross value per worker on commercial wheat farms in the Kansas-Oklahoma area, and only 27 percent as much as the productivity per worker on commercial farms of the Central Corn Belt. Both are areas in which we usually think of farming as being rather completely mechanized.

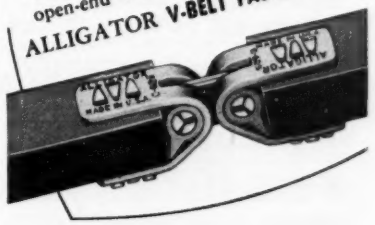
According to the Bureau of Labor Statistics, the average product per man hour of work in non-agricultural industries was more than three and a half times greater than it was in agriculture during the census year, 1949.

Heady shows that the capital investment per worker on commercial cotton farms in the Delta amounted to about $5,500, including land, equipment, livestock, and everything else. This was about one-third the U.S. average and compares with $29,000 for commercial wheat farms and nearly $32,000 for commercial Corn Belt farms. The average capital investment per worker in non-farm industries that year was around $9,500.

Theoretically, we can make a pretty sound case for saying that the solution to our efficiency and net income prob-

If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

ALLIGATOR V-BELT FASTENERS



★ In this way you can make up V-Belts in *any length* to fit *any drive* the fast economical way — V-Belts that perform exceptionally well.

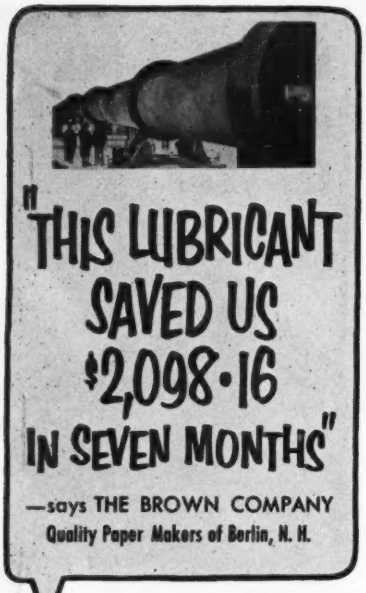
★ In contrast to link-type belts these ALLIGATOR fastened V-Belts have just *one* strong joint . . . *stretch and follow-up maintenance are reduced to a minimum.*

ALLIGATOR INTRODUCTORY V-BELT DRIVE UNITS contain V-Belting, Fasteners and Tools — everything you need in one compact package to make up V-Belts quickly. Available in sizes A, B, C & D.

Ask for Bulletins V-215 and V-216
Order From Your Distributor

FLEXIBLE STEEL LACING COMPANY
4632 Lexington Street, Chicago 44, Illinois

ALLIGATOR
V-BELT FASTENERS

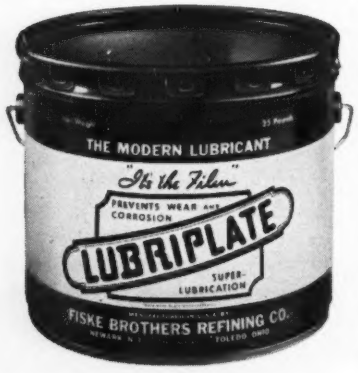


"During a seven-month period before using LUBRIPLATE No. 130-AA in the bearing of our Kraft Mill Lime Kiln, we used a conventional oil at a cost of $2,134.00. In the seven months that followed, we used LUBRIPLATE No. 130-AA for initial filling and replacement at the cost of $35.84."

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



lems in cotton production is simply to lay more money on the line for equipment. But let's look at this proposition from the standpoint of the farmer—"Mr. Bill-Payer" in cotton mechanization progress. He is undoubtedly curious about what the corn grower, or the wheat farmer, or American Viscose Corp. has tied up in capital equipment. He's also interested in the St. Louis Cardinals and in the Kinsey reports. And all of these things have about equal importance—or unimportance, I should say—in connection with his analysis of the capital requirements for additional mechanization on his own farm. His central and over-riding concern is this: Is the capital requirement going to be a paying investment? The term "input" which economists are so fond of using actually means "outgo" when you add up all the dollar signs and look at this from the producer's point of view. Whether you choose to call it input or outgo, it still has to be matched by opportunities for added income.

As Harold Young puts it, we are perhaps in a "new era" of mechanization progress. It is an era characterized by consolidating the gains that have been made during the past decade. We must focus attention upon refining the machines and techniques which are now available, and at the same time double and redouble our efforts to eliminate those practices which still can be done satisfactorily only with hand labor.

I sincerely hope we get through this new era quickly. To me, the retirement of the hoe and the modest improvements we can envision in our present machines and production practices won't satisfy the challenge of comparable income and production efficiencies.

• **Comparative Efficiencies**—If we want a goal, a challenge if you please, let's set out to match the chemical fiber industry in efficiency and productivity. Let me mention some computations based on American Viscose Corp. annual report for 1953. The gross value of the output of that corporation's 19,000 workers averaged about $11,400 per worker. Its productive capacity per worker was equal to 75 to 100 bales of cotton in fiber equivalent. Its investment in plant assets amounted to roughly $16,000 per worker, on the basis of initial cost, and about $9,000 on the basis of depreciated values. (They enjoyed the privilege of "rapid tax amortization" on some plants for two years.)

My own arithmetic indicates that, after making an allowance for "something" to replace the hoe, the investment in a complete mechanization operation would amount to something on the order of $28,000 to $32,000 per worker and the output would amount to something on the order of 50 bales per worker, with machines and techniques modestly better than those which we now have. In other words, we would have about **60 percent of the productivity** and **twice the investment per worker** in comparison with American Viscose. That comparison and other considerations suggest that we must travel a higher road if technology is to play a suitable role in the destiny of this cotton industry.

• **More Output per Dollar**—Machinery costs are becoming so increasingly conspicuous that they just naturally invite our attention as we begin to probe for the means of lowering production costs.

We frequently hear this problem disposed of with the simple but sweeping assertion that farm equipment is just plain priced too high. But I didn't raise this question just for an excuse to urge our friends in the equipment industry to reduce their prices. It is fair to ask the question as to whether machinery is too high in relation to its current economic productivity in the cotton industry. If the price per unit of equipment cannot be reduced much, are there ways in which it can be made to do more work?

All of us appreciate the wonderful contributions that the internal combustion engine has made, not just to farming operations, but throughout our whole economy and to our way of life. But on the other hand, the engines in our 1954 model tractors aren't basically much different from the first row-crop tractors. It is true that they are more powerful, easier to start, and less troublesome to keep running, but it would be most helpful if their basic ability to convert fuel into work could be improved still further. With all of the scientific progress that is going on around us, is enough of it being centered upon the development of a farm power unit that is basically more efficient than our present internal combustion engine?

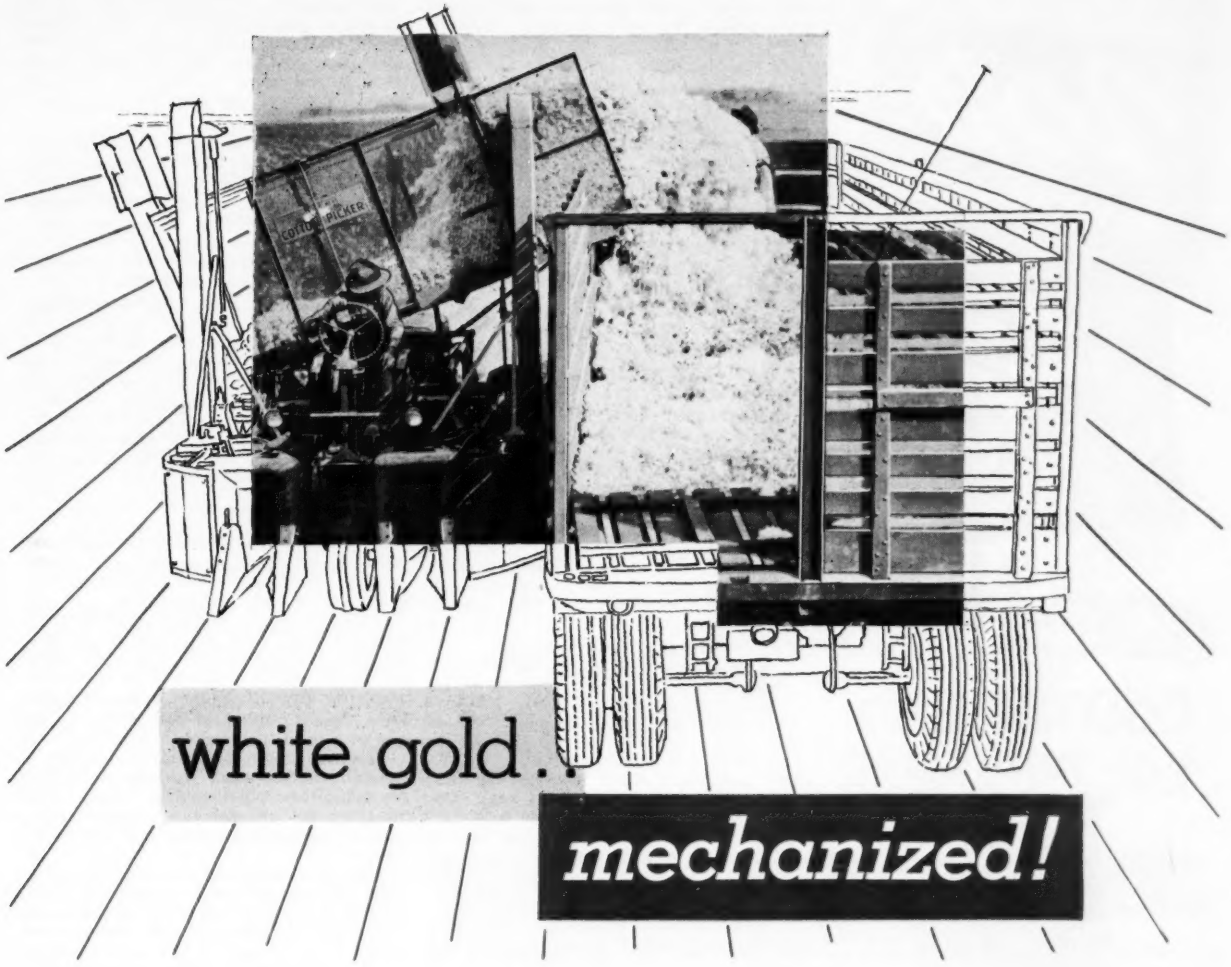
• **Bigness Often a Handicap**—Closely related to this problem of developing a more efficient source of farm power—perhaps it's a part of it—is the fact that as we have developed bigger machines (bigger in the sense of capacity to do more work) we have been increasing the weight of those machines. And, there seem to be a good many problems in this tendency towards bigness. How much are we losing when wet ground delays our getting into a field with these heavy rigs; and how much maneuverability are we sacrificing for bigness?

• **Over-Specialization**—As a cotton producer, there is something else that gives me concern. I can see no relief from the necessity of keeping my production plans pretty flexible. However, we are becoming increasingly dependent on large and enormously expensive items of equipment which are **specialized** in the job they perform—or in the conditions in which their operation is economically feasible. Cotton pickers and combines are the extreme examples of this.

Obviously this trend carries with it the chaining of ourselves to an increasingly rigid cost structure and a fixed pattern and level of production—one that simply isn't always compatible with sound farm business practices. I will quickly admit that I don't know where the answer to this quandary is to be found. But, perhaps a part of it might lie in developing a more versatile basic unit for self-propelled machines which, with appropriate attachments, could handle a wider range of production and harvesting jobs.

Of course the particular topics I have mentioned are simply a layman's view of what appears to be some of the soft spots. The really difficult part—the real challenge—is to program systematically the search for underlying obstacles to faster progress and to find the areas in which mutual advantage in private industry can generate feasible solution to those obstacles. Where profit incentives are lacking, it should be possible for public agencies and the cotton industry organization to take appropriate action.

• **Bold Development Policies**—Now for a question I raised in the beginning: Are



A large percentage of today's cotton crop is handled from the plant to the cotton gin and thence to the finished bale without ever having been touched by human hands.

This requires the present-day cotton ginner to stay abreast of the times with new gin machinery, cleaning and drying equipment, more power, and all the other necessary auxiliary equipment.

The cotton ginning and oil milling industries represent an invested capital of $750,000,000 . . . approximately ten percent of which is spent each year for new equipment, replacements, and repairs.

Here is a field that offers you a wonderful market for industrial machinery, power units, processing equipment, transmission machinery, insecticides, bags and bagging, and countless other products and services.

The Cotton Gin and Oil Mill Press serves this market from California to the Carolinas, and is the *official* publication for the National Cottonseed Products Association (oil mills), the National Cotton Ginners Association, and *every* state ginners association.

THE COTTON GIN AND OIL MILL PRESS
3116 COMMERCE, DALLAS, TEXAS

THIS IS OUR 55TH YEAR OF PUBLICATION

206 NEWSPAPERS
42 TV and RADIO Stations
sell
COTTONSEED OIL PRODUCTS
VIA

Mrs. Tucker's FOODS

Mrs. Tucker's Foods, INC.

the policies of private and public groups bold enough, basic enough to give cotton comparable incomes in 1975 and beyond?

If we borrow a classification from a recent study of private spending for research, it is fairly easy to get at decision-making guides for private research policies. Abbreviated, the classifications are:

1. Is the purpose mainly to protect the company's earnings from existing products and processes?

2. Is the purpose to go beyond the company's present competitive position and establish pre-eminence in its field?

3. Is competition forcing a search for new products and processes?

4. Or is the goal to find new sources of earnings through bold research and development policies?

Without implying criticism, if a board of directors decides to limit research to protection from existing tools and techniques, very little can be expected in the way of contributions to new efficiencies. Let us hope that few companies dealing with cotton improvements assume a "protective research" policy.

Research to establish pre-eminence over competition and the competitive push to find new products and processes are more likely to be the stimuli for most boards of directors.

In my view, the really big challenge for private organizations serving cotton is this: Will they, can they, tackle a bold research and development goal that will yield new earnings from new tools and techniques for cotton production and handling. Many companies made such decisions and committed huge sums when the outlook for cotton was dark indeed. I commend to you now a new look and added boldness with the much brighter future that you have helped make for cotton today.

• **Public Agency Research**—Adaptation and rounding out of equipment have been the main centers of attention for cotton mechanization research by agricultural experiment stations. The resulting contributions have been of great service. Such work has shortened the time-lag markedly for the steps between the actual pilot testing of a new machine and its widespread adoption on farms.

Public agency efforts have provided the lead in the corollary agronomic and entomological improvements accompanying mechanization.

The big challenge ahead, however, in public agency research is where do we go after making the best of the tools and techniques now available. If my analysis is right, we will still fall far short of comparable efficiencies and comparable incomes in cotton.

I cannot but ask, do we have our sights set high enough, bold enough, basic enough in our experiment station research programs? The acting chairman of the research committee for experiment station directors recently defined public agency research responsibilities in the broadest of terms before the Research Policy Committee of USDA. His statement was to the effect that any area of research should be tackled by anyone prompted by profit, service, or the advancement of knowledge. I cannot disagree with the generality. I must, however, raise questions as to whether with limited funds available, the choices between basic research and so-called applied research have been such as to maximize gains when one looks at public and private research efforts together. USDA spends about 12 percent of its funds in basic research. State experiment stations probably spend less than that. I believe that farmers and the general public have pressed too hard on public research workers for immediate, tangible results.

Where, then, can we strengthen our research for new fundamental principles, new scientific facts that will put us on the high road to full efficiency in cotton production?

The frontiers in cotton have been reopened with mechanization and associated scientific advancements.

To be content with under-development of these frontiers would be failure on our part to meet the challenges of America's most rapidly changing rural structure—the cotton-growing areas. We cannot meet these challenges by keeping our "ear to the ground." We can only meet them with the same bold foresight that has marked cotton's great surge ahead during the past 30 years.

Farm Equipment Industry Accepts Challenge

■ *By Bruce Lourie, Moline, Ill., Vice-President—Sales, Deere and Co., and Executive Committee Chairman, Farm Equipment Institute*

WHAT THE farm equipment industry has done in the **past** for mechanization is of course now history and has been eulogized—deservedly or not—in previous conferences. So the immediate question is: What are we doing—what can we do—to meet challenges such as those laid out so forcefully by Doctor Sayre?

Let me emphasize, in beginning, that we fully realize the responsibility of the farm equipment industry in providing the tools the farmer needs for most efficient production at the lowest cost.

Let me say, too, that before a manufacturer can plan the development and production of a tool or machine intelligently, he must determine the requirements of the machine and have some idea of the sales potential. A manufacturer can and does gamble on many new machines but he cannot overestimate potential sales too many times and remain in business.

Costs of an item of equipment—cost of manufacture and costs of distribution—are directly related to the volume of production of the item. In order to keep costs to the farmer as low as possible, the equipment engineers are continually endeavoring to provide more versatile or multi-use equipment.

Anything which can be done to a basic machine or implement to adapt it for use in an increased number of conditions or crops will tend to lower the cost of manufacture by offering greater volume of sales. This is mentioned here because it may often be economy to compromise and make some sacrifice in performance rather than to insist on a somewhat better performance at greatly increased costs.

I want to clarify this statement and avoid any possible criticism that our industry is side-stepping its responsibilities by not always supplying special equipment for very limited uses. Actually, our industry engineers will not admit that a tool or mechanism cannot be provided for almost any agriculture re-

quirement which may arise. The costs of developing and manufacturing, however, might be so great as to make the final cost of the machine or equipment prohibitive for any practical economic use.

For example, my own company started experimental engineering work on a spindle cotton picker in about 1927. From that time until 1948, when we thought we had a design worthy of a limited field trial, we spent over $1 million. We then decided to build 12 experimental machines which cost us—not the selling price but the actual cost—approximately $500,000. In other words, those first 12 machines cost about $125,000 apiece. Had there been a demand for only 12 machines, it is obvious that no farm operator could have afforded such a machine. In a sense, you could say the first spindle-type picker we ever built cost us about $1,250,000, and that isn't charging up to the experimental work any of the time or expenses of top management people who followed the experimental work very closely and made valuable contributions to it from time to time.

• **Constant Improvement** — In spite of these seemingly pessimistic or defeatist statements about the high cost of specialized equipment, we shall see constant improvement in farm equipment. I think that is particularly true of the equipment for cotton producing areas, as we continue to obtain new knowledge of materials and manufacturing processes and more complete information on field requirements.

Of course the problem of completely mechanizing small farm units will continue to be with us. Economists tell us that there is a minimum limit to the economic size of farms. However, that is a variable thing depending on the type of farm, kind of crops, location, size of family, etc. We believe that mechanized operations will be found on smaller and smaller farms as time goes on.

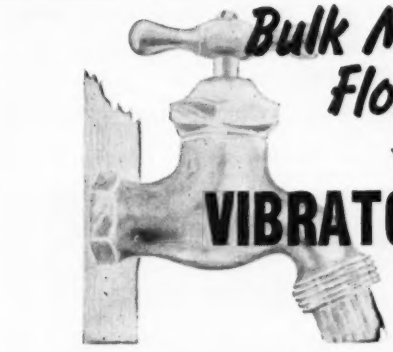
In any discussion of mechanization of small farms the question always arises as to small tools or small machines for these farms. We believe that this question does not refer so much to size as it does to first cost. The problem of reducing cost of manufacture in proportion to the reduction in size of the manufactured unit has not yet been solved. There is also a minimum limit in size of a tool or machine beyond which the machine may be relatively ineffective.

Soil working tools, for example, have definite functions to perform. In general, the soil working practices on the 10-acre field must be the same as on the 200-acre field to obtain comparable crop results. To scale the equipment down in size for a small power unit, the working width of certain tools should not be reduced, whether moldboard plow, disk plow, chisel or harrow, to the degree where the tool will not penetrate as well, cover trash as well or stir the soil as well as required for maximum benefits to the crop.

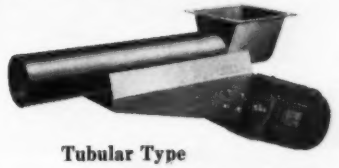
We believe these requirements definitely fix a lower power limit in a tractor unit for general field use. We believe that small size farm tractors now available to farmers have reached this limit and the only possibility of lower cost power units lies in reduction of manufacturing costs on which all manufacturers are constantly working. Any substantial reduction in manufacturing costs seems rather remote under present conditions. The two major cost factors in any piece of farm equipment continue to be labor and materials.

One solution to lower cost power—about which we have heard little discussion—is the purchase of good used tractors and used equipment by farmers whose small acreages will not justify the first cost of new equipment. At the same or lower first cost as the smaller sizes of new equipment, the farmer can purchase larger sizes of field-worthy used equipment. Under a great many conditions he can do more effective and more trouble-free field work with the larger units. Providing reliable, reconditioned used equipment is one of the ways in which the farm equipment retailer is contributing to the expansion of more effective farm mechanization.

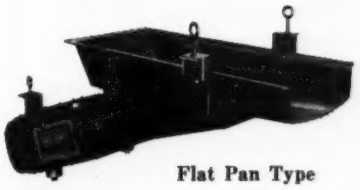
The retail implement dealer plays an increasingly important part in the advance of mechanization. Manufacturers are very active in carrying on training programs for dealers. Dealer's service



Bulk Materials Flow Like Water with SYNTRON VIBRATORY FEEDERS



Tubular Type



Flat Pan Type

Like a smooth, regulated flow of water, Syntron Feeders move bulk materials from bins, hoppers and chutes to conveyor belts, ball mills, mixers and other processing installations. Easily installed for automatic or semi-automatic set-ups. Handle most materials from fine powders to coarse, heavy lumps, at controllable feeding rates from a few pounds to hundreds of tons per hour.

Write today for complete catalogue data—Free

SYNTRON COMPANY
325 Lexington Avenue Homer City, Penna.

Get YOUR SAWS..NOW for

OK for
1. QUALITY
2. SATISFACTION
3. TURNOUT
4. SAMPLE
5. DURABILITY

BETTER GINNING — Yes — it's time to get your gin saws now. DON'T DELAY, call or write Cotton Belt Gin Service, Inc., today. You'll be assured better SAMPLE, more TURNOUT, LONGER LASTING SAWS!

We install gin saws and ribs, "IN YOUR GIN PLANT," furnishing two factory-trained mechanics on each service truck. You furnish no labor. Standard price — no extra charges! Call us now!

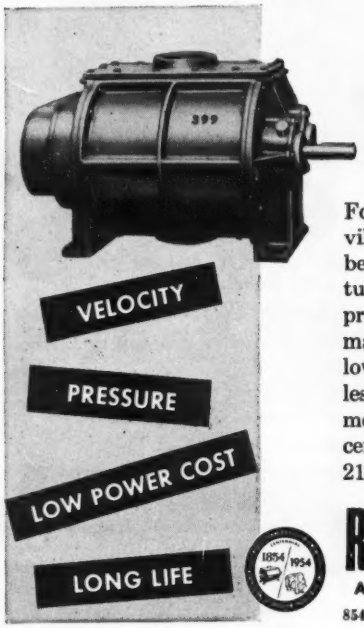
CERTIFICATE OF GUARANTEE
Cotton Belt Gin saws are FULLY GUARANTEED for quality and workmanship. All installation and repair service carries the same GUARANTEE. Ray Senter, Cotton Belt Gin Service, Inc., Dallas, Texas.

COTTON BELT GIN SERVICE, INC.
"Largest Exclusive Manufacturer of Gin Saws in America"
500 South Haskell — Phone TAylor 9389 — Dallas, Texas

shops, many with factory trained service men, are very effective in the repair and reconditioning of equipment and in knowledge of its most efficient field use. The implement dealer has taken an important place in his community and, with his constant interest in new farming practices, can be of great help to his farmer customer with information on types of equipment and methods of use. We believe that the farm equipment retailer should be included among those receiving, from extension services and other agencies, information pertaining to new farm practices, new crops, etc.

To summarize these remarks and to indicate the industry's answer to the challenge of mechanization in the future, it is apparent that the farmer will continue to demand greater output per worker. This will be accomplished by use of more compact, more versatile, and more maneuverable equipment. The features will be more efficient integral tools, more use of electric and hydraulic power and other means to reduce to a minimum any laborious and time-consuming jobs of assembling, transporting and operating equipment.

• **Keep Up With Research** — Our industry will follow agricultural research and new practices closely in an attempt to lessen the time lag between findings and availability of dependable, field-proven equipment for carrying out these practices.



Look for the **BIG 4** when you buy blowers

For pneumatic conveying, Roots-Connersville Rotary Positive Blowers have long been recommended by leading manufacturers of cotton gin equipment. They have proved that these simple, sturdy units maintain flow and overcome resistance, at low power cost, and provide more air with less wear. For new equipment or replacements, insist on R-C Blowers, product of a century of experience. Details in Bulletin 21-B-37, free on request.

ROOTS-CONNERSVILLE BLOWER

A DIVISION OF DRESSER INDUSTRIES, INC.

854 Carolina Ave. • Connerville, Indiana

COMPLETE PLANTS AND UNITS

extraction and processing of vegetable oils

developers of the Rotocel, installed capacity exceeds 1,000,000 tons per year

BLAW-KNOX COMPANY · chemical plants division

180 N. Wabash Ave., Chicago 1, Ill.

BLAW-KNOX

Pittsburgh 30 • Tulsa 1 • New York 17 • Philadelphia 3 • Birmingham 3 • Washington 5, D.C. • San Francisco 5

In machines where weight is not essential for proper functioning, materials lighter than iron and steel are being used when practical. This trend will continue, but cost is a deterrent when the lighter materials are used as structural members which frequently comprise an important part of the total weight of a machine.

The development of multi-use machines has been a problem of the equipment designer for many years, and progress has been made. The earliest activity in this line was, of course, in mounting the various units on the tractor—such as mowers, corn pickers, cotton pickers, beet harvesters and, more recently, forage harvesters and balers. In addition to the tractor mounted equipment there is also available the self-propelled power unit on which can be mounted the corn picker, combine, forage harvester and other machines. Of even more recent development is the corn picking attachment for grain combines.

We believe that the future of the multi-purpose machine as it can be envisioned now will depend on how well the farmer operator will accept certain compromises in the performance, maneuverability and accessibility which may possibly be found in the use of the several units. Its acceptance will also depend greatly on the ease of assembling and disassembling of the various machines to the power unit. The cost of the multi-use power unit, plus the attached machines the average farmer owns, may not be materially less than individual complete machines. Convenience and availability are also important factors that must not be overlooked. We can all be assured that if the multi-use machine is economically desirable, competitive activities among manufacturers will make the equipment available.

Doctor Sayre raises the question of a more efficient source of power than the present combustion engine. A great part of the economy of the world is now built around the internal combustion engine and the benefits derived from a more efficient source of power would be immense. Scientists and engineers are continually working on this problem and when a more efficient source of power is developed, it will certainly be adapted for agricultural use. That applies to nuclear energy or anything else that may be developed in the future.

• **Equipment Investment**—I understand that the equipment investment per farm worker on a completely mechanized Southern farm today is in the neighborhood of $10,000-$15,000. That emphasizes the fact that farming today is a business—big business—just like manufacturing, retailing, transportation.

Using my own company as an example again, it requires an investment of approximately $22,000 per employee for us to manufacture farm equipment in 1954. When you multiply that by 10,000, 20,000, or 50,000 employees, you get some idea of the investment required by the various farm machinery manufacturers to enable them to meet the challenge of mechanization. If we had to replace all of our factories and factory equipment at today's prices, that $22,000 would probably double or triple.

In conclusion, we can say that the farm equipment industry will not only accept the challenge of mechanization but will endeavor to do an even better job of producing equipment for the farmer than in the past.

• Output of Mellorine Doubles in 1953

PRODUCTION of mellorine, the new frozen dessert made from cottonseed oil, totaled 22,494,000 gallons in 1953, more than double the 1952 output, according to a USDA report.

The National Cotton Council points out that four states, Illinois, Missouri, Oklahoma and Texas, which reported production of mellorine in 1952, accounted for 93 percent of the total produced last year. Texas showed an increase of 4,521,000 gallons between the two years, leading the other states in volume increases, whereas Oklahoma showed the largest percentage gain—a 309 percent increase. In Illinois, 1953 production increased 116 percent over 1952, reaching a total of 5,300,000 gallons. Combined production for the four states amounted to 20,862,000 gallons for 1953, with Texas accounting for 10,870,000 gallons.

The number of plants manufacturing mellorine in 1953 totaled 559, the USDA report says, as compared to 347 in 1952. Oklahoma showed the largest gain with 80 and Texas second with an increase of 56.

The Council estimates that the market potential for cottonseed oil in mellorine is between 150 and 200 million pounds annually.

Whether or not the big potential can be attained depends on legislation to lift remaining discriminatory bans, sales efforts, product quality and price, the Council emphasizes.

That mellorine can be merchandised successfully to all income groups has been shown by market surveys which reveal, however, that strong consumer promotions are needed to get mellorine accepted on its merits instead of as an imitation ice cream. Mellorine should not be sold as ice cream, just as margarine is not sold as butter. They are separate and distinct products and should be sold as such, the Council says.

As the latest government figures show, mellorine consumption has risen rapidly in areas where it has been introduced. The average retail price is about 18 cents a pint.

The following states now permit the manufacture and sale of mellorine: Alabama, Arkansas, California, Illinois, Missouri, Montana, Nevada, Oklahoma, Oregon and Texas.

Texas Co-op Ginners Will Meet in San Antonio

Texas Cooperative Ginners' Association, Texas Federation of Cooperatives and Houston Bank for Cooperatives will hold their 1955 joint convention in San Antonio on Feb. 7-8. The Plaza Hotel will be headquarters. B. E. Schroeder, 307 Nash Building, Austin, is executive vice-president of the ginners' group and federation.

$10.8 Billion Meat Sales

American Meat Institute estimates that the meat packing industry in 1953 sold $10.8 billion worth of products, and paid out for livestock and other farm products 75.6 cents of every dollar received. Profits from all sources, including by-products, produced net earnings of 0.8 cent on each dollar of sales.

Margarine-Butter Survey Results Are Reported

USDA has completed surveys of margarine and butter use in approximately 300 households each in Birmingham and Indianapolis. It was found that 67 percent of the households in Birmingham used margarine exclusively, while in Indianapolis, 51 percent used margarine only.

Butter was used exclusively in 11 percent of the households in Birmingham and in 28 percent in Indianapolis.

Twenty percent used both table spreads in the Southern city and 21 percent used both in Indianapolis. It was learned that two percent used neither spread in Birmingham, while there were no families in the Ohio city which were without one spread or the other.

It appears that income was more of a factor in butter use in Indianapolis than in the Alabama city. USDA attributes this to the fact that low-income families in Birmingham ate more hot breads with butter than did the corresponding group in Indianapolis.

Armour & Co. Buys Butter

Sale of 106,176 pounds of Commodity Credit Corporation butter to Armour & Co. for export to the Philippines has been announced. This brought the total of butter sold for export at world prices to 403,562 pounds.

CCC also has sold 790,000 pounds of nonfat dry milk for export.

"ThermO-Last"
DU PONT
NYLON PRESS CLOTHS & FILTER CLOTHS
Highest Quality for Better Standards

SUMNER COMPANY
MILL & OFFICES - COLUMBIA, S.C.
Call our nearest representative —
Robert Burgher, Dallas, Texas
Mason Jackson Co., Shreveport, La.
Foreign agent: M. Neumunz & Son, Inc., 90 West Street, New York 6, N. Y.

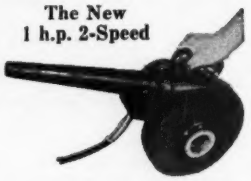
141- and 176-Saw
Change-Over Equipment
BUTTERS IMPROVED AUTOMATIC LINTER
SAW SHARPENING MACHINES FOR 141 OR 176 SAWS
Produces More Lint Cut Per Saw
LINTER SAWS . . . DROP-FORGED STEEL RIB GRATE FALLS . . .
STEEL RAKE HEADS . . . SAW MANDRELS . . . BALL
BEARINGS . . . FLOATS . . . ALUMINUM SPACE BOARDS
PERMANENT MAGNET BOARDS
BUTTERS MANUFACTURING CO.
ATLANTA, GA.

AT YOUR SERVICE
with the BEST in
MAGNETIC SEPARATORS

MAGNI-POWER CO. • Wooster, O.

TRY IT—FREE

The New
1 h.p. 2-Speed



ACE GIN BLOWER

To prove that the ACE Gin Blower

Cleans faster and better
Reduces fire hazards
Prevents overheating
Saves time and labor

We will send one for FREE TRIAL.

Write for details. No obligation.

The Ace Co.

114 W. Washington St., Ocala, Fla.

BEARINGS
SHAFTS
PULLEYS

- Mund Boilers
- Packing and Hose
- Waste and Wiping Rags
- Hand and Electric Hoists
- Phelps Cotton Fans and Unloaders
- Belts of all kinds—Leather, Rubber, Canvas, and V-Belts.

Whatever parts or equipment you may need for your COTTON GIN or OIL MILL, call on us for prompt, friendly service.

WELL MACHINERY & SUPPLY CO. Inc.
1629 MAIN ST. FORT WORTH

THE key TO GREATER EFFICIENCY AT LOWER COSTS

- MECHANICAL SCREW PRESSES
- SELF CONTAINED COOKER-DRYER
- SOLVENT EXTRACTION PLANTS
- FLAKING AND CRUSHING ROLLS

FRENCH

THE FRENCH OIL MILL MACHINERY CO.
PIQUA, OHIO

• Mississippi Mills Make Changes

A NUMBER of changes in personnel of Mississippi Cottonseed Products Co. have been announced by J. B. Perry, Jr., Grenada, vice-president and general manager.

George Covington Perry has been elected secretary and treasurer of the company, effective Aug. 1, succeeding John R. Mason, deceased. Perry will assume his duties in Jackson some time in September.

John H. Adams, who has been assistant manager of the Planters Oil Mill at Greenwood for a number of years, became manager of the Grenada Oil Mill on Aug. 1, succeeding George C. Perry.

E. C. Mason became assistant manager of the Planters Oil Mill at Greenwood, effective Aug. 1.

Retired South Carolina Oil Mill Man Dies

Wilbur B. Greyard, who had been associated with Greenville Cotton Oil Co., a number of years until his retirement in 1952, died at Greenville, S.C., on July 26. Services were held July 27 at Greenville.

He was a member of the Greenville Rotary Club, the Salvation Army advisory board, South Carolina Cotton Seed Crushers' Association, the Elks Club and a member of the First Presbyterian Church and the men's Bible class of that church.

Survivors include his widow, Mrs. Lilly Wilkins, formerly of Florence; one daughter, Mrs. L. M. Cline, Jr., of Greenville; one son, Wilbur B. Greyard, Jr., of Milledgeville, Ga.; his stepmother, Mrs. T. S. Greyard of McDonald, N.C.; one sister, Mrs. P. N. Harris of Raleigh, N.C.; two half sisters, Mrs. Newman Miller of Boone, N.C., and Mrs. H. K. Beeker of Snow Hill, N.C., and one half brother, T. S. Greyard, Jr., of McDonald, N.C.

Symbol of Progress for Cotton • BACK AND SUPPORT . . . *your* NATIONAL COTTON COUNCIL

Smalley Check Samples Are Announced by Chemists

American Oil Chemists' Society has announced that the 1954-55 series of Smalley check samples will be in charge of J. P. Hewlett, Sharon Laboratory Service, Denison, Texas, for crude vegetable oils; R. T. Doughtie, USDA, Memphis, for oilseeds and oilseed meals; Lloyd Anderson, Minnesota Linseed Co., Minneapolis, for drying oils; C. P. Long, Procter & Gamble Co., Cincinnati, for tallow and grease; and W. D. Pohle, Swift & Co., Chicago, for glycerine. General chairman is R. W. Bates, North American Laboratory Service, Inc., Chicago.

Mexico Cuts Lint Tax

Mexico has reduced the export tax on cotton the equivalent of 5.1 percent, USDA reports. The new tax rate, including a surtax, amounts to 22.4 percent ad valorem.

CALENDAR

Conventions - Meetings - Events

			1	2	3	4
12	13	14	15	16	17	18

• Aug. 30 — National Soybean Processors' Association annual convention, Hotel Peabody, Memphis. R. G. Houghtlin, 3818 Board of Trade Building, Chicago 4, president.

• Aug. 31-Sept. 1-2—American Soybean Association annual convention, Hotel Peabody, Memphis. Geo. M. Strayer, Hudson, Iowa, secretary-treasurer.

• Oct. 11-12-13—Cotton Spinner-Breeder Conference. Greenville and Stoneville, Miss. For information write Delta Council, Stoneville.

• Oct. 11-12-13—American Oil Chemists' Society fall meeting. Hotel Radisson, Minneapolis. For information write American Oil Chemists' Society, 35 East Wacker Drive, Chicago.

• Dec. 2-3—Beltwide Insect Control Conference. Hotel Adolphus, Dallas. For information write National Cotton Council, P. O. Box 18, Memphis 1.

1955

• Jan. 31-Feb. 1—National Cotton Council of America annual meeting. Hotel Shamrock, Houston. Wm. Rhea Blake, P. O. Box 18, Memphis, executive vice-president.

• Feb. 7-8—Cottonseed Processing Research Clinic. Southern Regional Research Laboratory, New Orleans. Sponsored by the Valley Oilseed Processors' Association and the Laboratory. C. E. Garner, 1024 Exchange Building, Memphis 3, Association secretary.

• Feb. 7-8—Texas Cooperative Ginners' Association joint convention with Texas Federation of Cooperatives and Houston Bank for Cooperatives. Plaza Hotel, San Antonio. B. E. Schroeder, 307 Nash Building, Austin, executive secretary.

• Feb. 15-16—Southeast Gin Suppliers' Exhibit. Biltmore Hotel, Atlanta. Sponsored by the Alabama-Florida, Carolinas and Georgia ginners' associations. For information write Tom Murray, Room 410, Henry Grady Building.

• Feb. 15-16 — Carolinas Ginners' Association annual convention. Atlanta, Ga. Clifford H. Hardy, 400 Broad Street, Bennettsville, S.C., executive secretary-treasurer. To be held concurrently with Southeast Gin Suppliers' Exhibit.

• Feb. 15-16—Georgia Cotton Ginners' Association annual convention. Biltmore Hotel, Atlanta. Tom Murray, Room 410, Henry Grady Building, Atlanta, executive vice-president. To be held concurrently with Southeast Gin Suppliers' Exhibit.

• March 14-15 — Midsouth Gin Supply Exhibit. Midsouth Fairgrounds, Memphis. For information write W. Kemper Bruton, executive vice-president, Arkansas-Missouri Cotton Ginners' Association, P. O. Box 345, Blytheville, Ark. Arkansas-Missouri and Tennessee ginners' associations will hold annual conventions in connection with the exhibit.

• March 14-15—Arkansas-Missouri Cotton Ginners' Association annual convention. Memphis. W. Kemper Bruton, P. O. Box 345, Blytheville, Ark., executive

2 National Favorites!

Wesson Oil

Preferred for America's Salads. . . . More popular every day for Stir-N-Roll pastry and biscuits!

Snowdrift

Pure vegetable shortening . . . Emulsorized for quick-method cakes . . . makes digestible, good-tasting fried foods.

WESSON OIL & SNOWDRIFT SALES COMPANY

NEW YORK—NEW ORLEANS—SAVANNAH—SAN FRANCISCO—HOUSTON—CHICAGO

MODERN STEEL STORAGE

All-Steel Self-Filling Non-Combustible

BUILDINGS

For—

• COTTONSEED

• SOY BEANS

• PEANUTS

Designed, Fabricated and Erected

Confer with us on your storage problems

MUSKOGEE IRON WORKS

Muskogee, Oklahoma

7 CHEMICAL LABORATORIES TO SERVE YOU

★ Memphis, Tenn.
★ Little Rock, Ark.
★ Blytheville, Ark.
★ Cairo, Ill.
★ Des Moines, Iowa
★ Chicago, Ill.
★ Clarksdale, Miss.

WOODSON-TENENT LABORATORIES

Main Offices: MEMPHIS, TENN.

Specializing in analyses of Cottonseed, Soybeans and their products, Fats — Feeds — Fertilizers — Germinations

THE *Finest* TELESCOPE EVER BUILT!

A PROVEN PRODUCT

Last season we were unable to supply the demand. We have a large supply on hand at the present time. But materials are getting scarce.

Better place your order now before it is too late.

•

Runs on track—unloads long trucks or trailers without moving up.

Easy to Operate

Bronze Oil-Lite Bearings Throughout

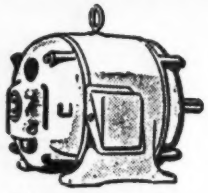
Sturdy Construction

A Real Labor Saver

The STACY COMPANY, Inc.

2704 TAYLOR ST. DALLAS 1, TEXAS

SPARE MOTORS



FOR GINS AND OIL MILLS

Delivered and Installed

Anywhere—Anytime

New Motors:

Allis-Chalmers

Century

A. O. Smith

Baldor

Electric Motor Repair and Rewinding

DAYTON BELTS

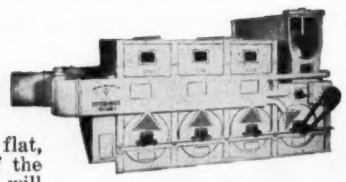
LUMMUS GIN REPAIR PARTS

LUBBOCK ELECTRIC CO.

1944 Texas Avenue Phone 5-6898—Or Nights, 4-7827, Or Consult Directory

LUBBOCK, TEXAS

HINCKLEY



72" COF

Our 72" Drier-Cleaner-Boll Opener has flat, paddle blades that blow the trash out of the cotton without damage to the fiber. You will be delighted with one in your gin.

Write:

HINCKLEY GIN SUPPLY COMPANY

4008 Commerce St. Dallas 1, Texas

vice-president. To be held concurrently with Midsouth Gin Supply Exhibit.

• March 14-15—Tennessee Cotton Ginners' Association annual convention. Memphis. W. T. Pigott, P. O. Box 226, Milan, secretary-treasurer. To be held concurrently with Midsouth Gin Supply Exhibit.

• March 18-19-20—West Coast Division, International Oil Mill Superintendents' Association, annual convention. Ambassador Hotel, Los Angeles. H. F. Crossno, 9065 Gainsford Street, Downey, Calif., convention chairman; H. E. Wilson, Wharton, Texas, secretary-treasurer.

• March 28-29—Valley Oilseed Processors' Association annual convention. Hotel Buena Vista, Biloxi, Miss. C. E. Garner, 1024 Exchange Building, Memphis, secretary.

• April 4-5-6 — Texas Cotton Ginners' Association annual convention. State Fair Grounds, Dallas. Jay C. Stilley, 3724 Race Street, Dallas, executive vice-president. For exhibit space, write R. Haughton, president, Gin Machinery & Supply Association, Inc., 3116 Commerce Street (P. O. Box 444), Dallas.

• May 3-4—National Cotton Compress and Cotton Warehouse Association annual convention. Boca Raton Club, Boca Raton, Fla. John H. Todd, 1085 Shrine Building, Memphis, executive vice-president.

• May 20-24—National Cottonseed Products Association annual convention. Jung Hotel, New Orleans. S. M. Harmon, 19 South Cleveland Street, Memphis, secretary-treasurer.

• June 5-8 — International Oil Mill Superintendents' Association annual convention. Lubbock. H. E. Wilson, Wharton, Texas, secretary-treasurer.

• June 7-8-9—Tri-States Oil Mill Superintendents' Association annual convention. Edgewater Beach Hotel, Biloxi, Miss. Roy Castillow, Southern Cotton Oil Co., Little Rock, Ark., secretary-treasurer.

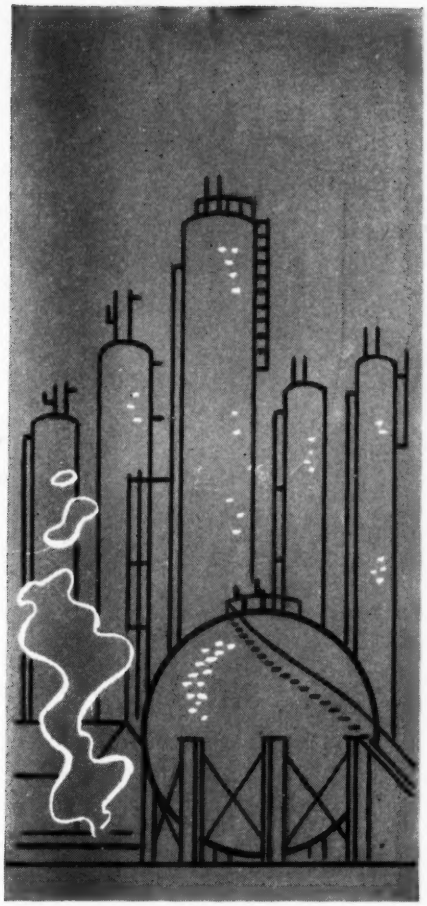
• June 20-21—Alabama-Florida Cottonseed Products Association and Georgia Cottonseed Crushers' Association annual joint convention. Edgewater Gulf Hotel, Edgewater Park, Miss. T. R. Cain, 213 Professional Center Building, Montgomery, executive secretary, Alabama-Florida association. J. E. Moses, 318 Grand Theatre Building, Atlanta 3, secretary, Georgia association.

• June 23-24 — Mississippi Cottonseed Crushers' Association forty-fifth annual convention. Hotel Buena Vista, Biloxi. For information write 207 One Hundred East Pearl Building, Jackson.

Compress and Warehouse Meeting in Florida

Boca Raton Club, Boca Raton, Fla., will be the site for the 1955 annual meeting of the National Cotton Compress and Cotton Warehouse Association, N.C. Blackburn, president, has announced. May 3-4 will be the dates, with meetings of the retiring directors and committees on May 2 and a May 5 meeting of the new board of directors.

John H. Todd, executive vice-president, Memphis, has arranged with the Boca Raton management for those attending the convention to enjoy the many unique entertainment features of the club.



Offices in 24 Principal Cities

a solvent
for every
problem

AMSCO
EXTRACTION SOLVENTS

AMERICAN MINERAL SPIRITS COMPANY

CHICAGO

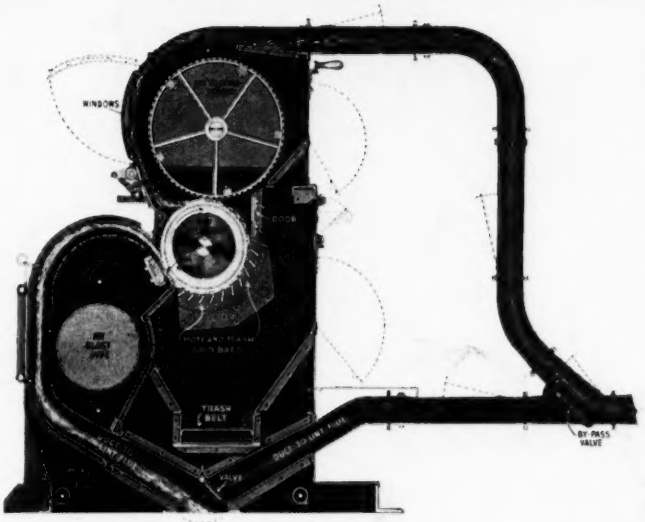
New York • Los Angeles

HARDWICKE-ETTER COMPANY

LINT CLEANER

Efficient
Easy to Operate
Improves Sample
Fits Any Make Gin
No Damage to Fiber
Simple in Operation
Ample Capacity for 90-Saw Gin
Profitable to Ginner & Producer

Write for special bulletin



HARDWICKE-ETTER COMPANY

MANUFACTURERS **Sherman, Texas**

The New

MURRAY 90

"Safety Gins"

The one Gin HAVING ALL features wanted by owners and operators

These amazing NEW 90-SAW GINS have been designed throughout with a view of affording operating personnel the greatest possible safety protection. The entire front assembly is hinged at the bottom, so that the top swings forward and away from Saw Cylinder. Sprocket and Chain Drives and Ends of Saw Cylinder are fully enclosed with Safety Shields. Actual field tests in various locations have shown a positive increase in capacity ranging from 12½ to 25 percent. It is a completely new Gin, of much heavier design, produced by precision methods, and requiring a minimum of adjustments.

THE MURRAY COMPANY OF TEXAS, INC.

DALLAS • ATLANTA • MEMPHIS • FRESNO